

FIG. 2

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FIG. 2

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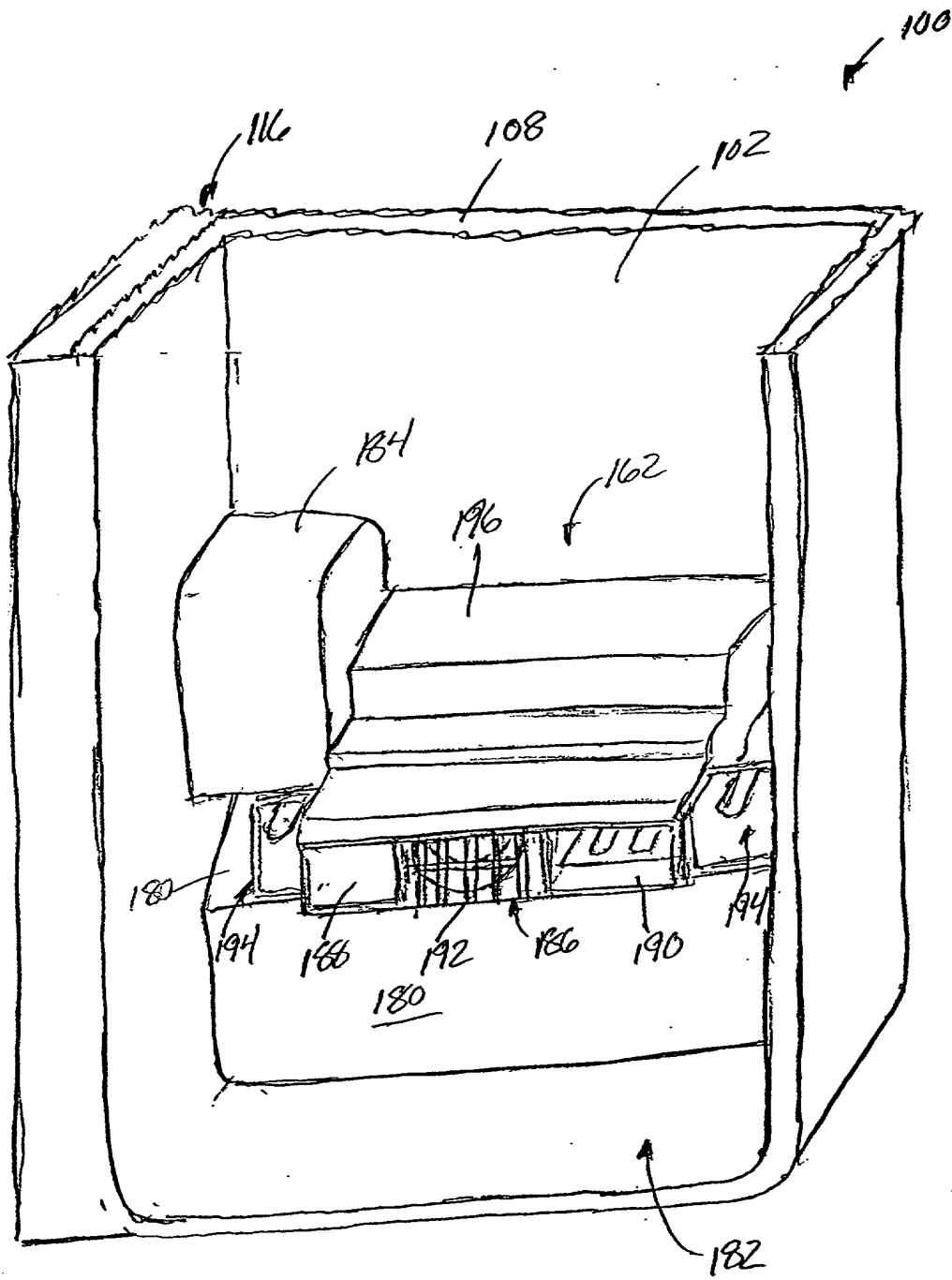


FIG. 3

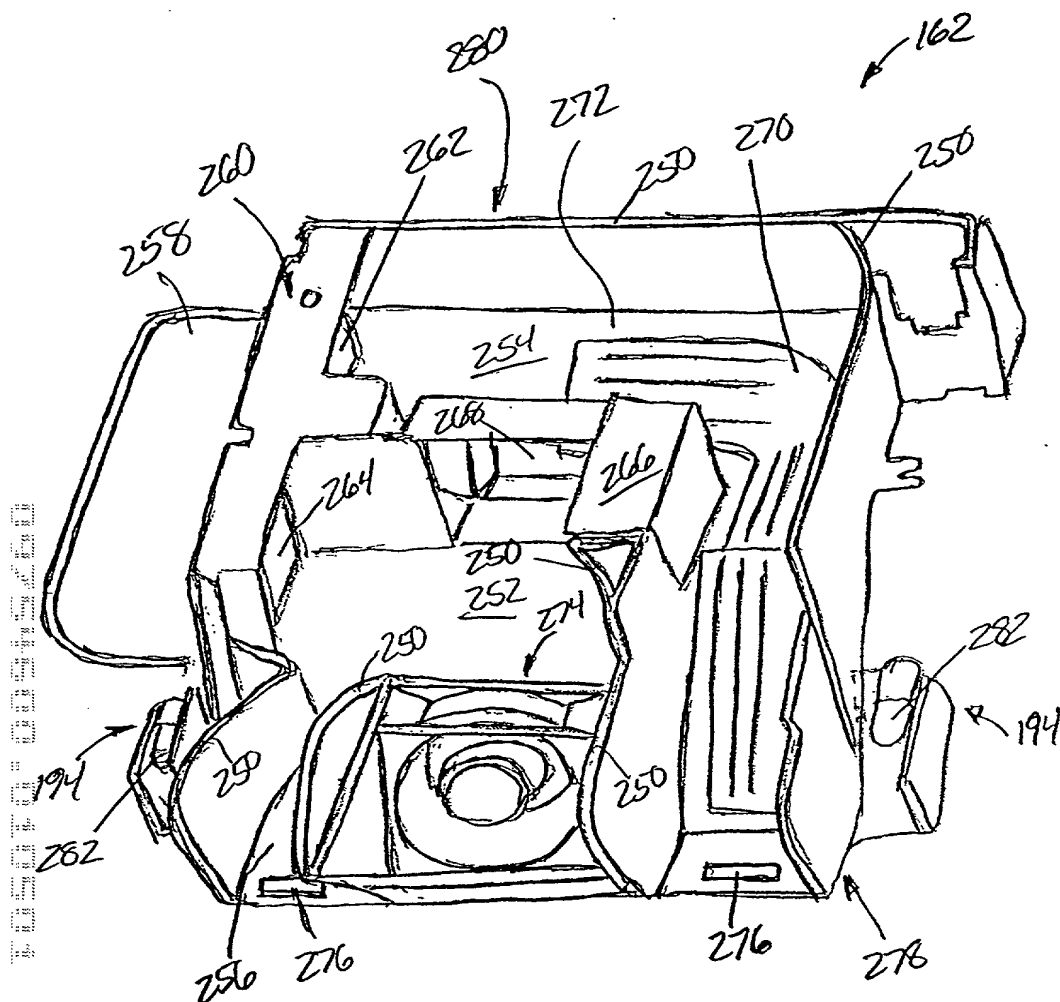
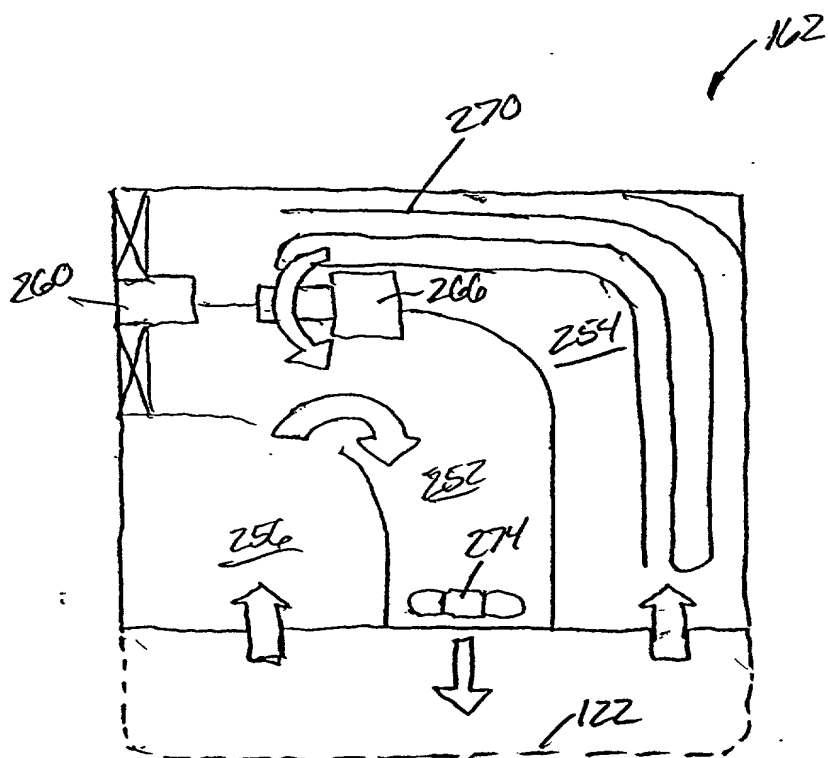
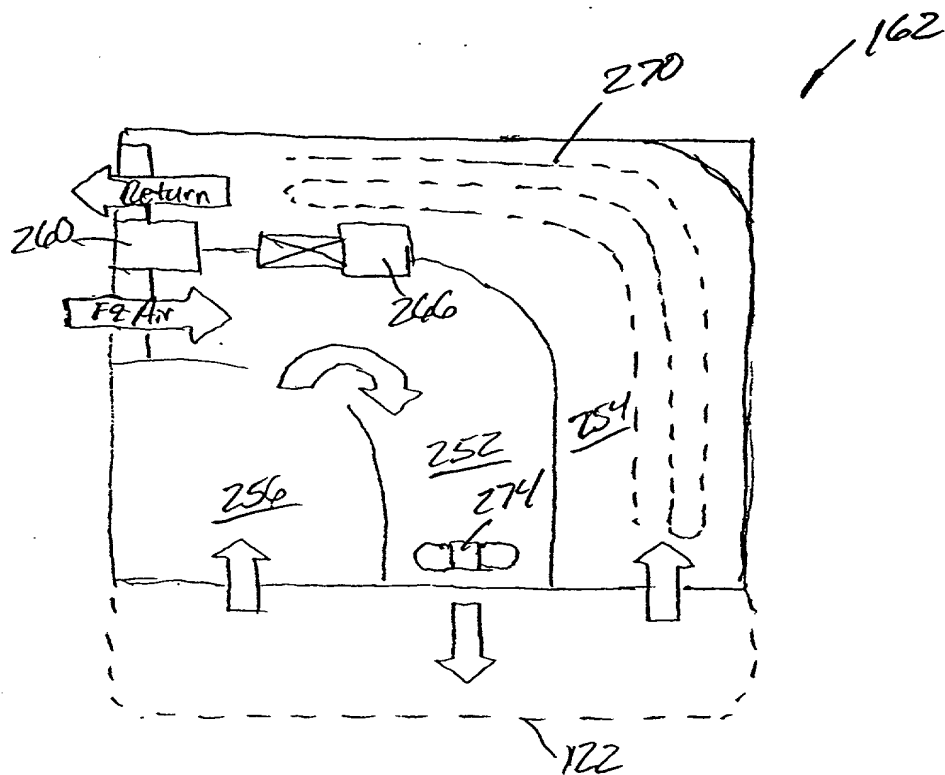


FIG. 4



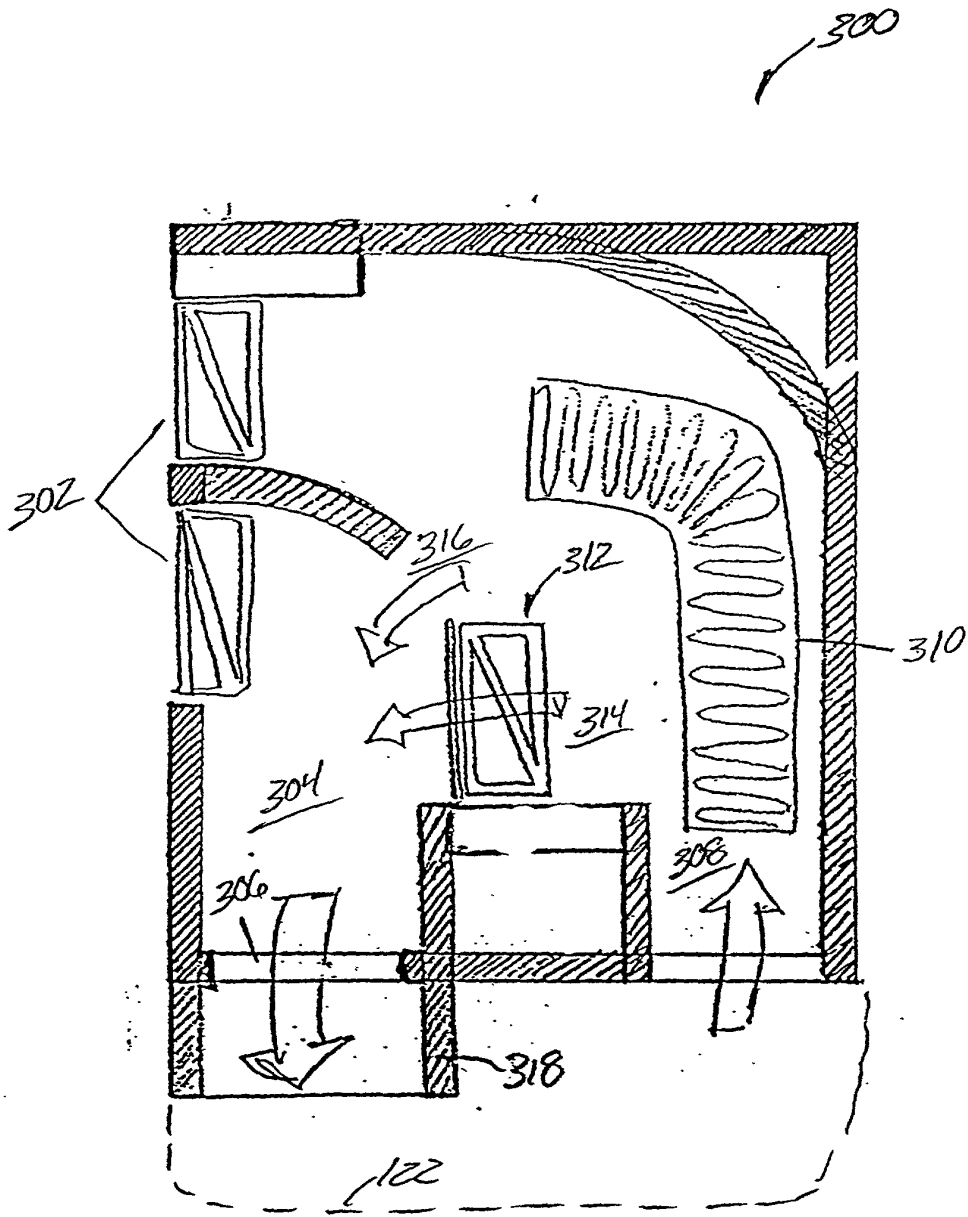
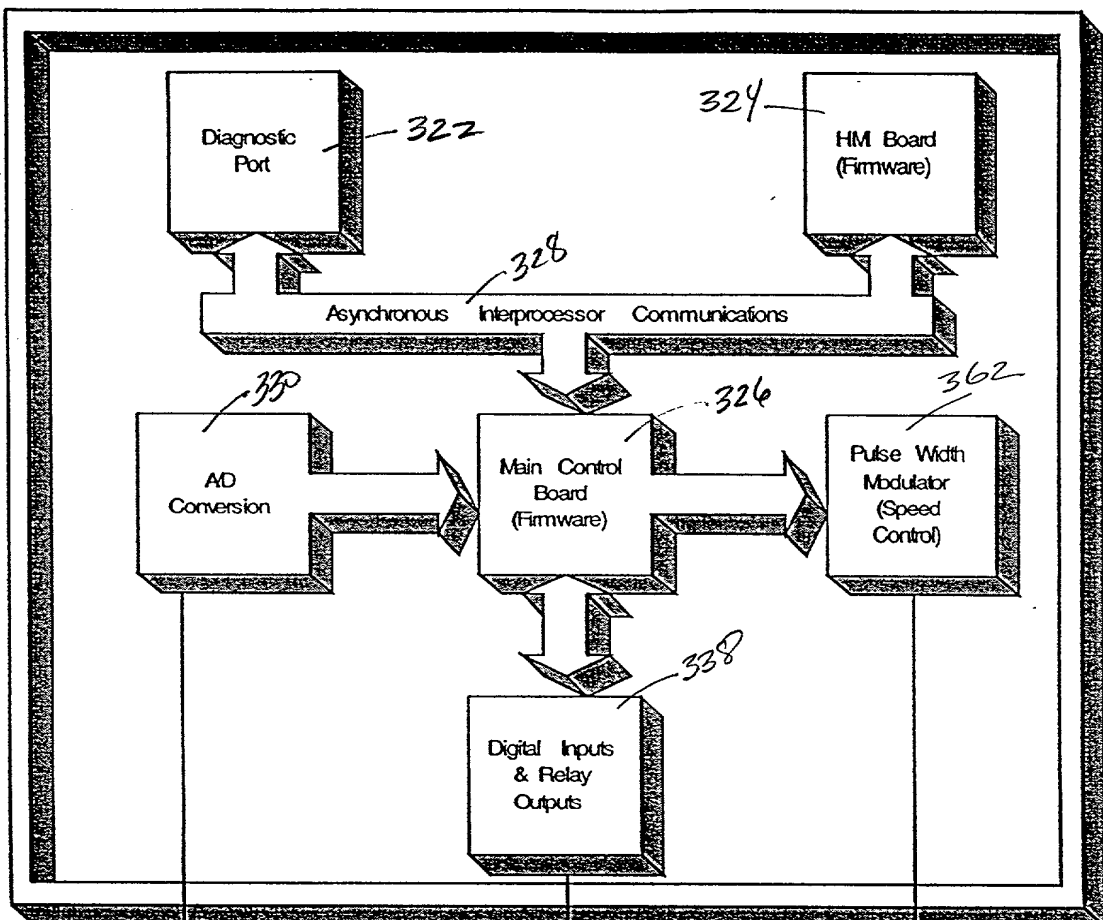


FIG. 7

320



- FF Temp 2 - 332
- FF Temp - 332
- Feature Pan Temp - 276
- FZ Temp - 334
- Evap. Temp - 336

- Cond. Fan Tach. - 340
- Evap. Fan Tach. - 342
- Crusher Solenoid - 344
- Auger Motor - 346
- Personality Inputs (Site Specific) - 348
- Water Dispensor Valve - 350
- Encoders for Set Points - 352
- Compressor Cntl - 354
- Defrost Heater - 356
- Door Detector - 358
- Muffin Damper - 360
- Feature Pan Damper 1 - 260
- Feature Pan Damper 2 - 266
- Feature Pan Heater - 270
- Condensor Fan - 364
- FF Fan - 366
- Evaporator Fan - 368
- Feature Pan Fan - 274

FIG. 8

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320

318

316

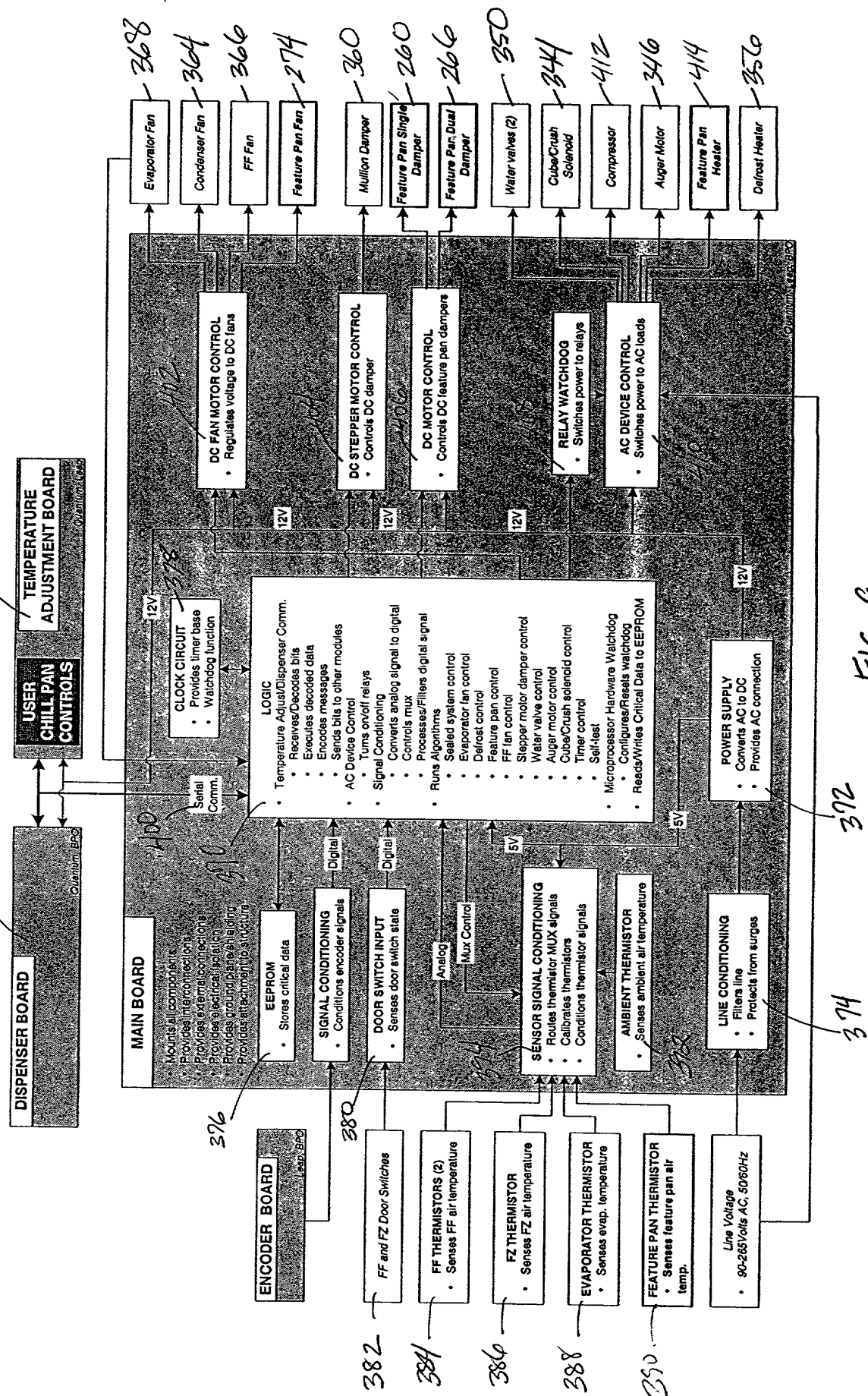


FIG. 9

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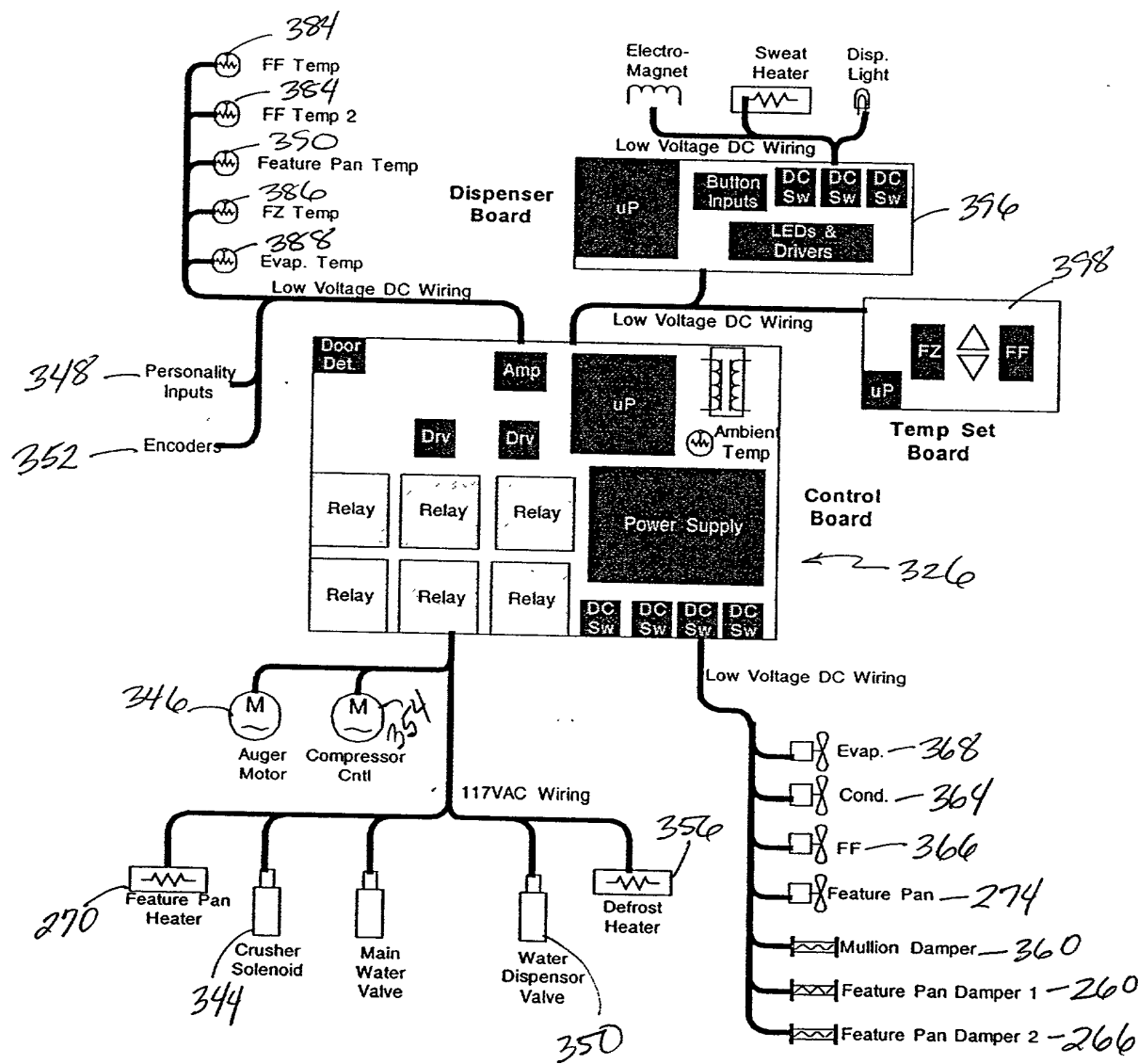


Fig 10

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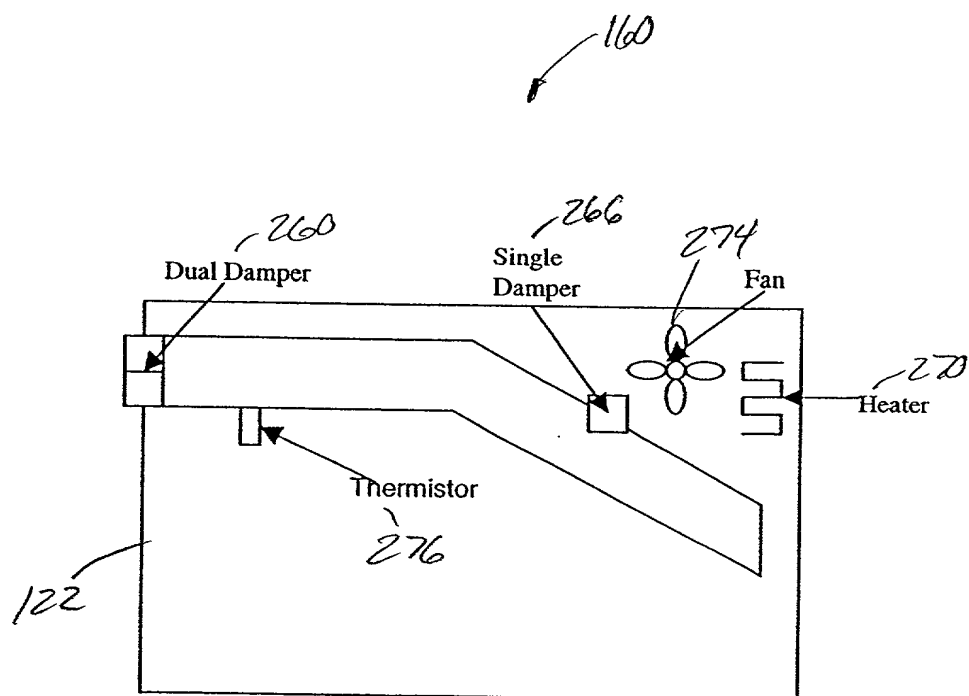
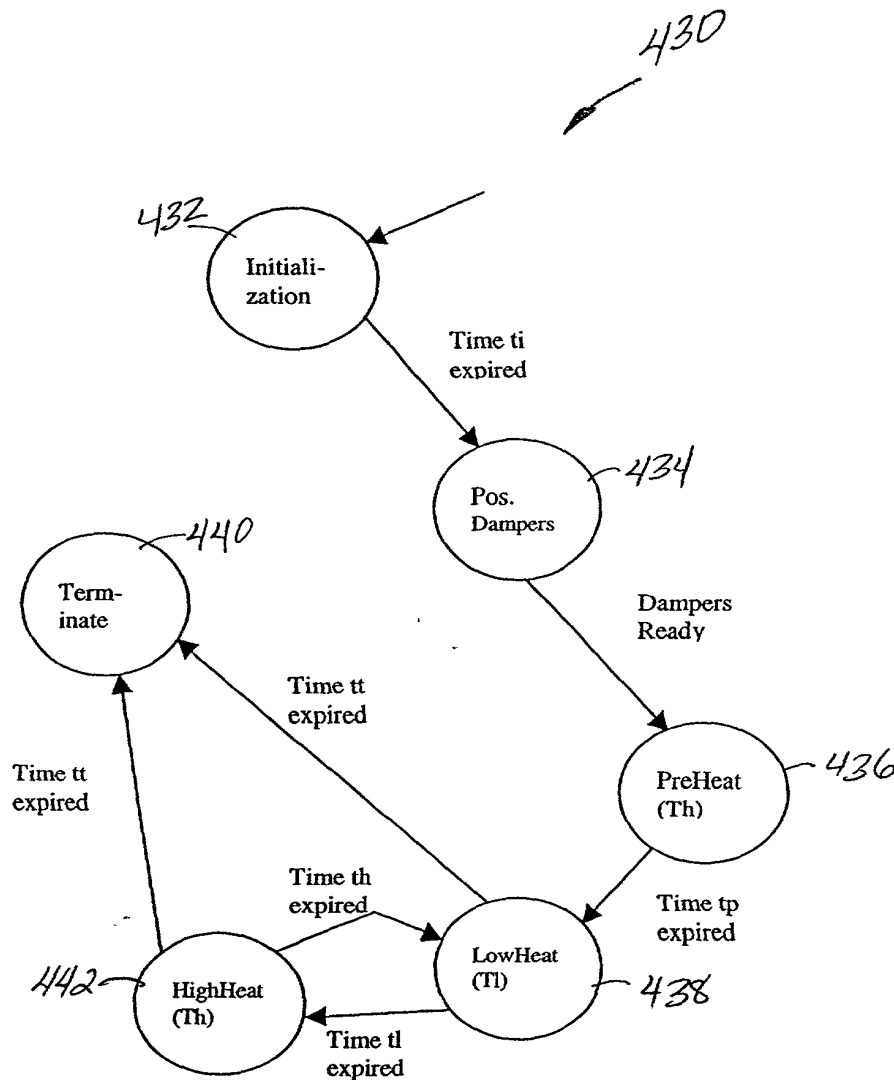


Fig. 11

Fig. 12.



Initialization: Shuts off heater and turns on fan. This mode is implemented so that the customer interface LED that is wired in parallel with the fan will turn on as soon as the button is hit. Time t_i is the initialization time and will typically be approximately one minute.

Pos. Dampers: This state shuts off the fan, sets the single damper open then closes the dual damper. It then turns the fan back on. This is done for power management.

PreHeat: This state regulates the pan temperature

LowHeat

HighHeat:

Terminate: This mode closes both dampers and shuts off the fan then returns to idle.

Fig. 13

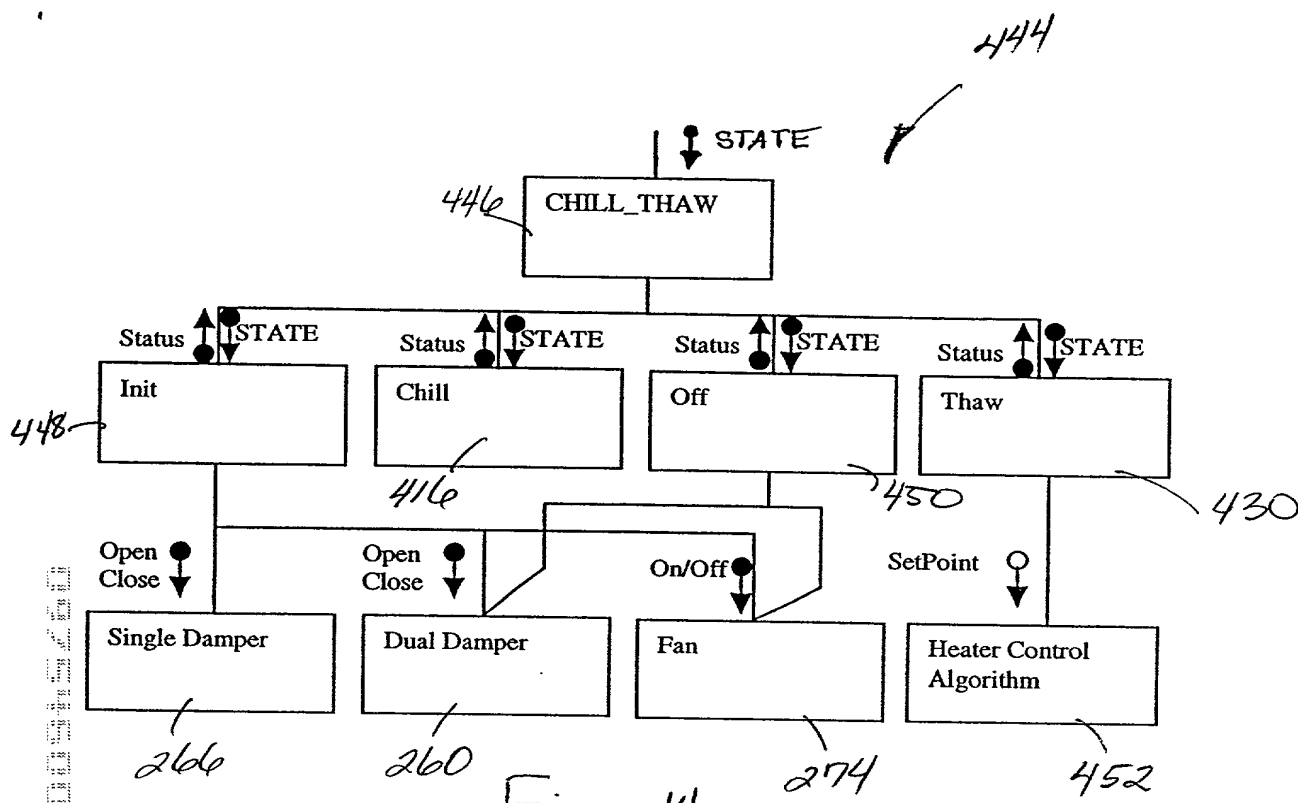


Fig. 14

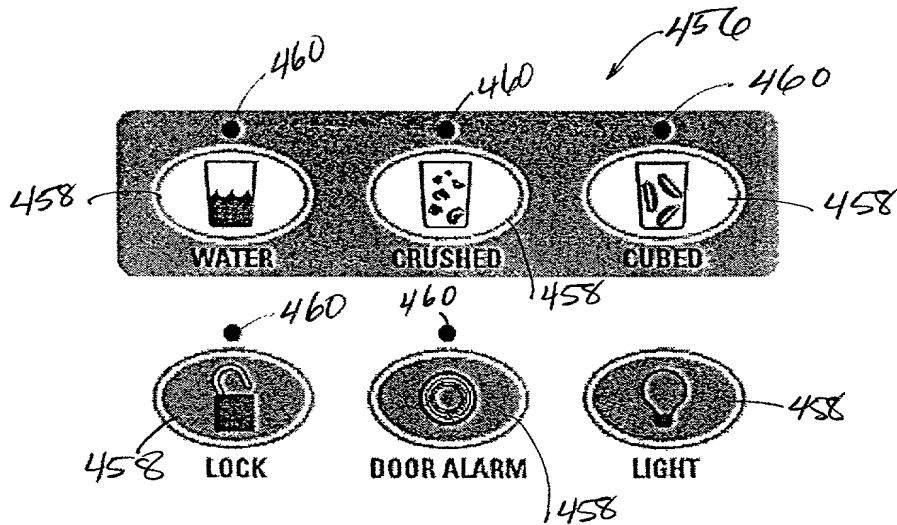


FIG. 15

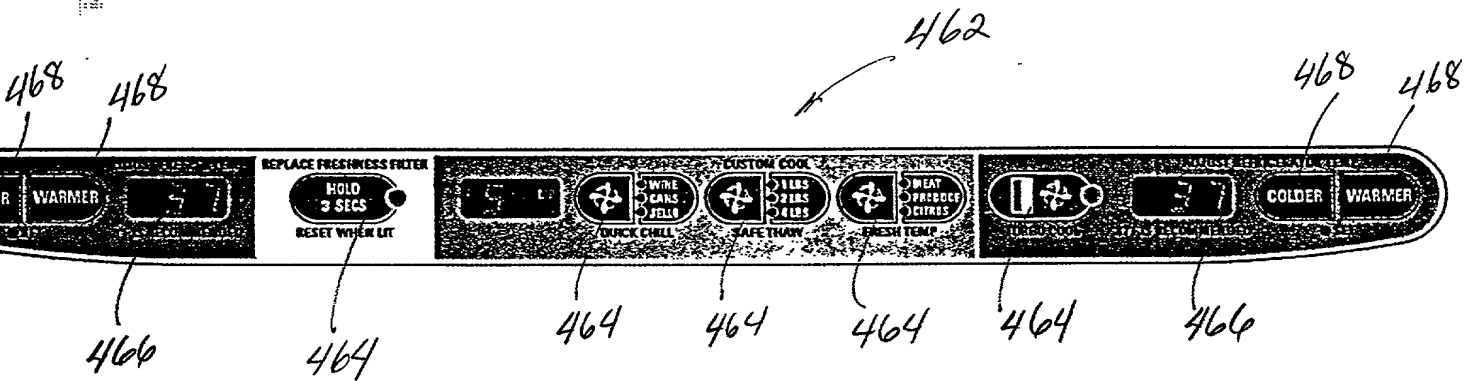


FIG. 16

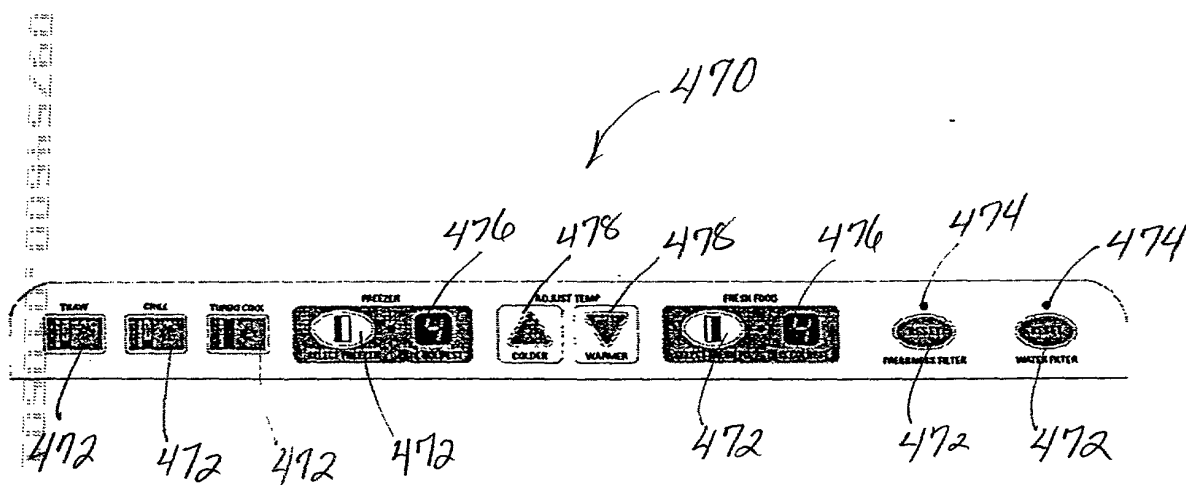
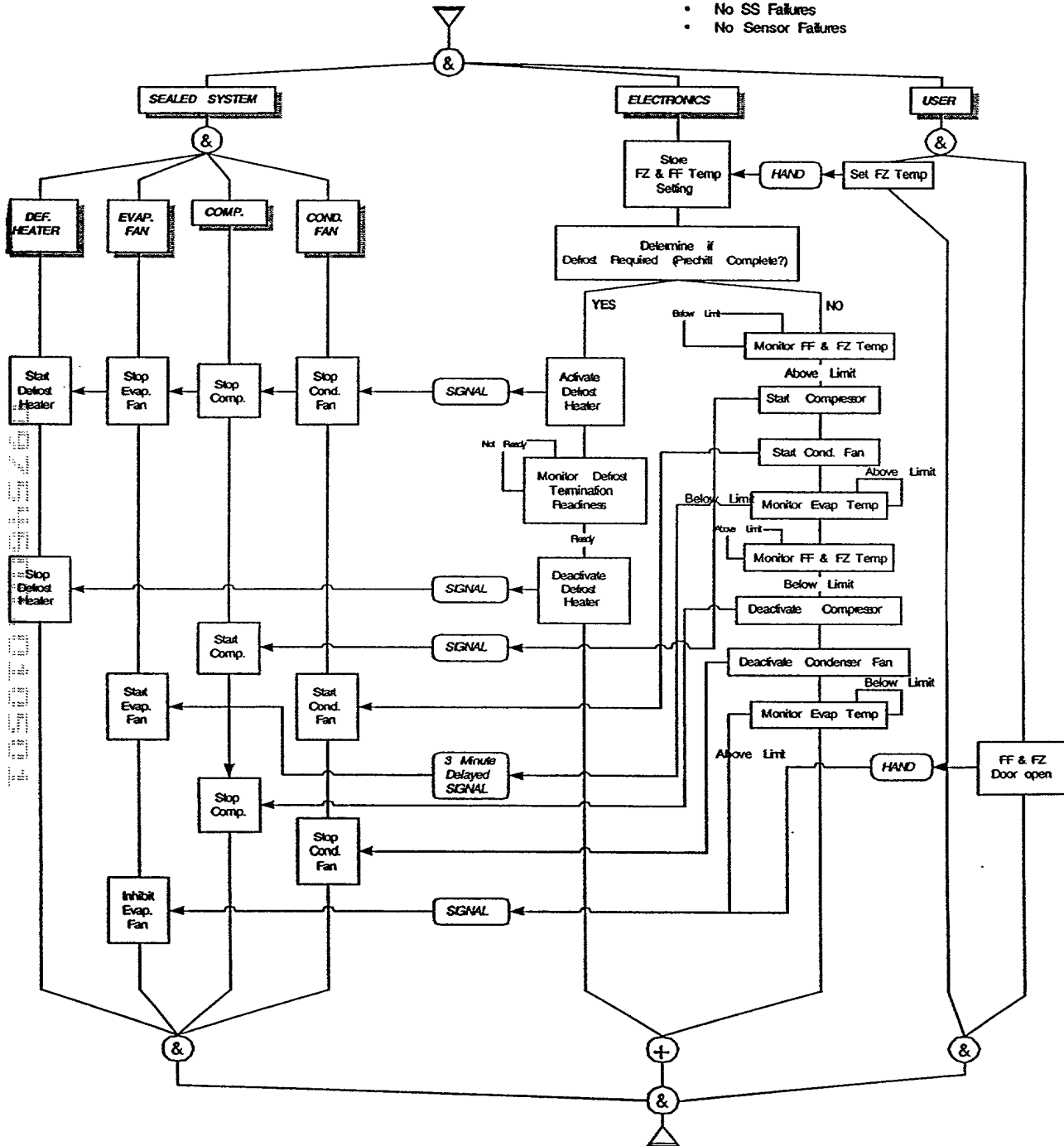


Figure 17.

Sealed System Assumptions:

- No SS Failures
- No Sensor Failures

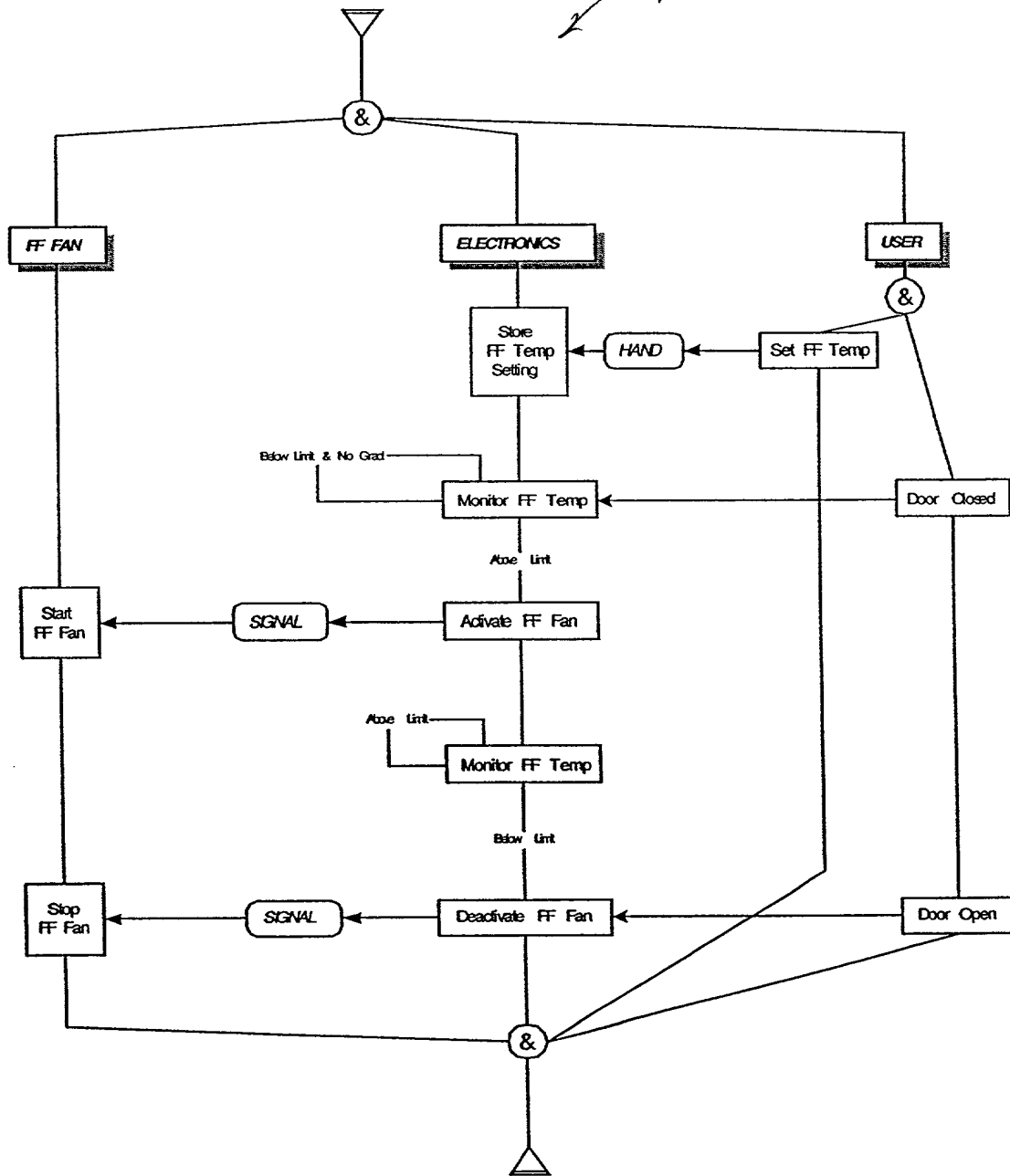


Sealed System Behavior Diagram

Fig 18

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Fresh Food Fan Behavior Diagram

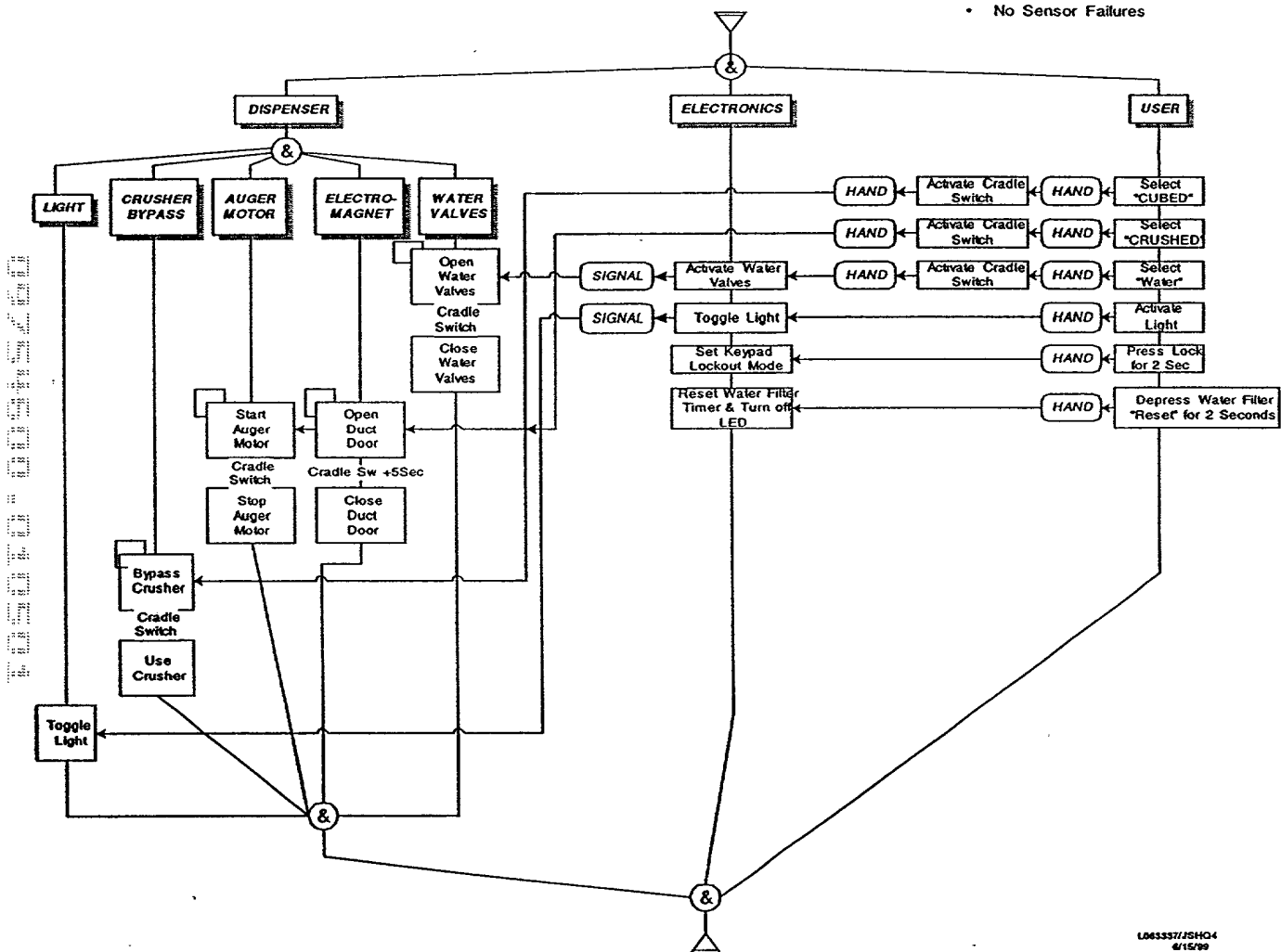
Fig 19

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Dispenser Assumptions:

- No Sensor Failures



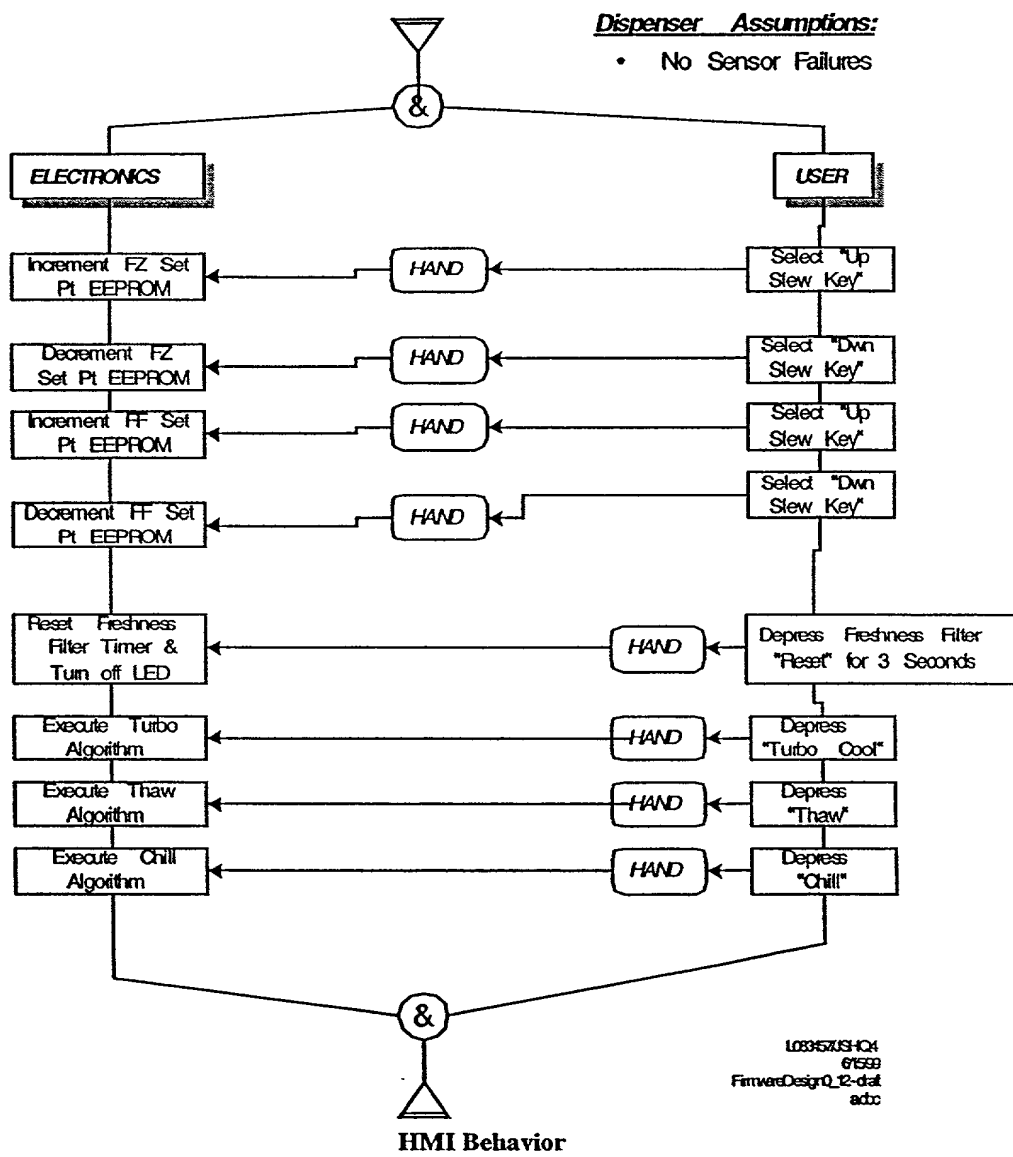
L065337/JSHQ4
6/15/99

Dispenser Behavior

Fig 20

4/6/0

19/55

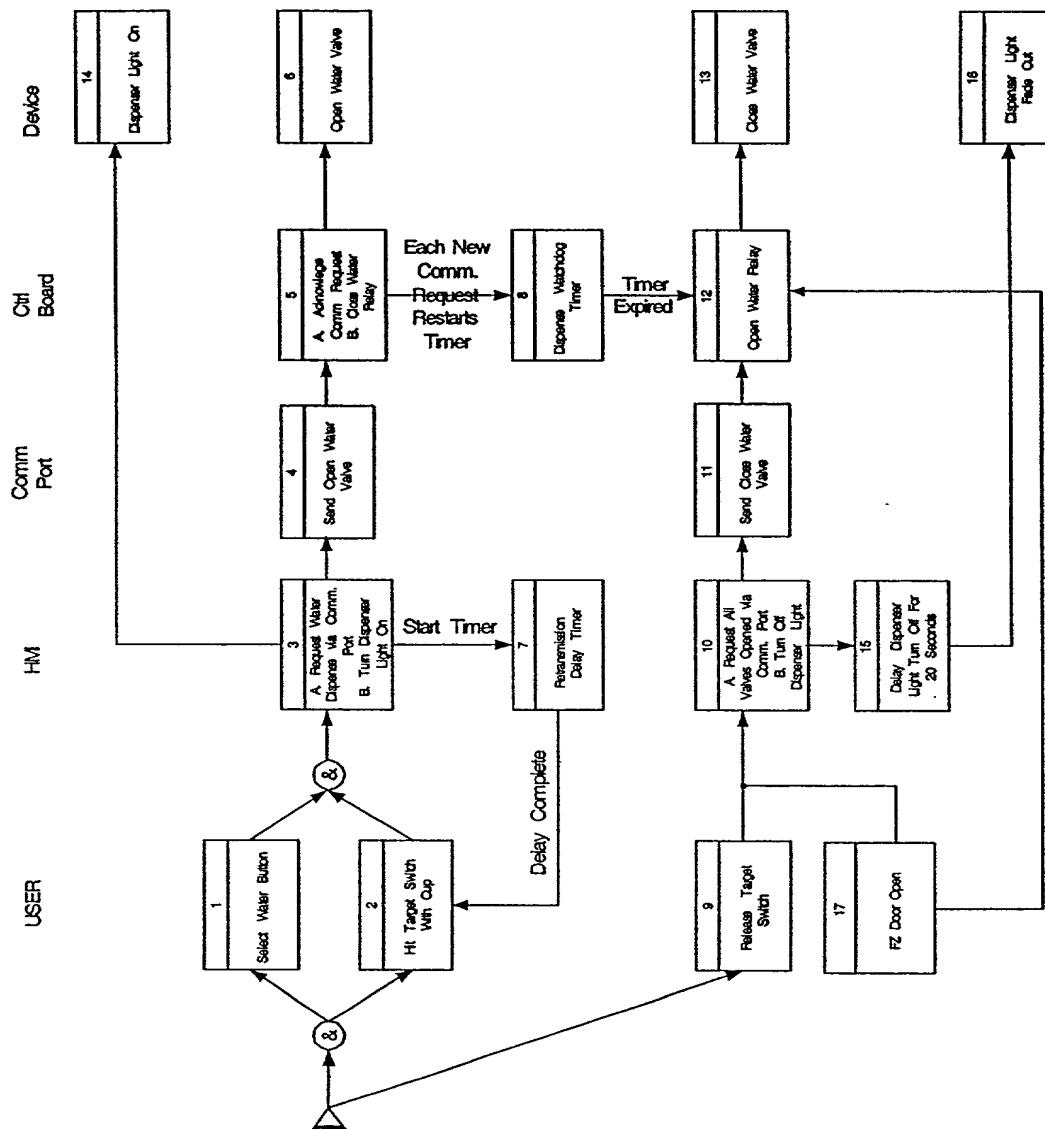


103457USHQ4
61580
FirmwareDesign02-dat
adcc

Fig 21

20/57

4/18/88

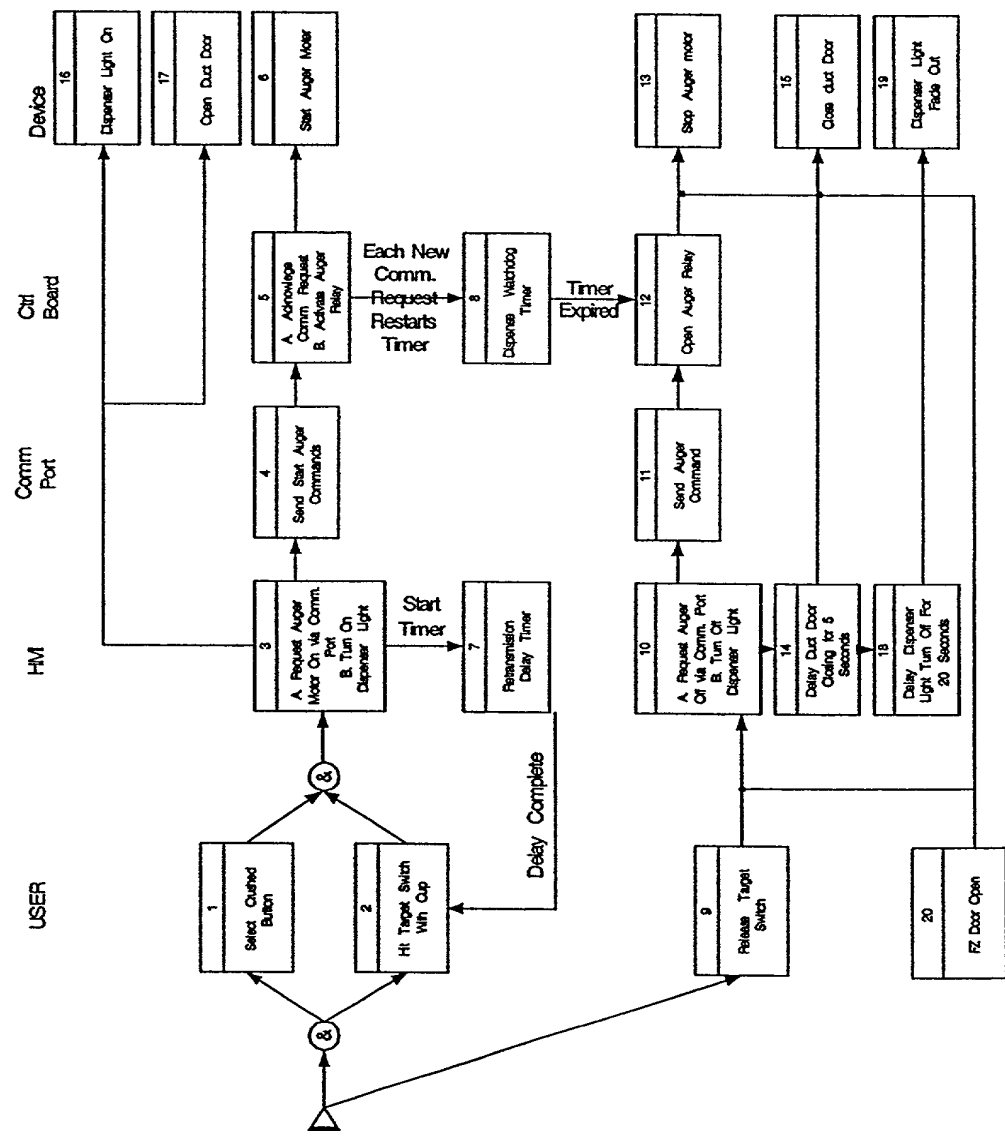


Water Dispenser Interactions

Fig 22

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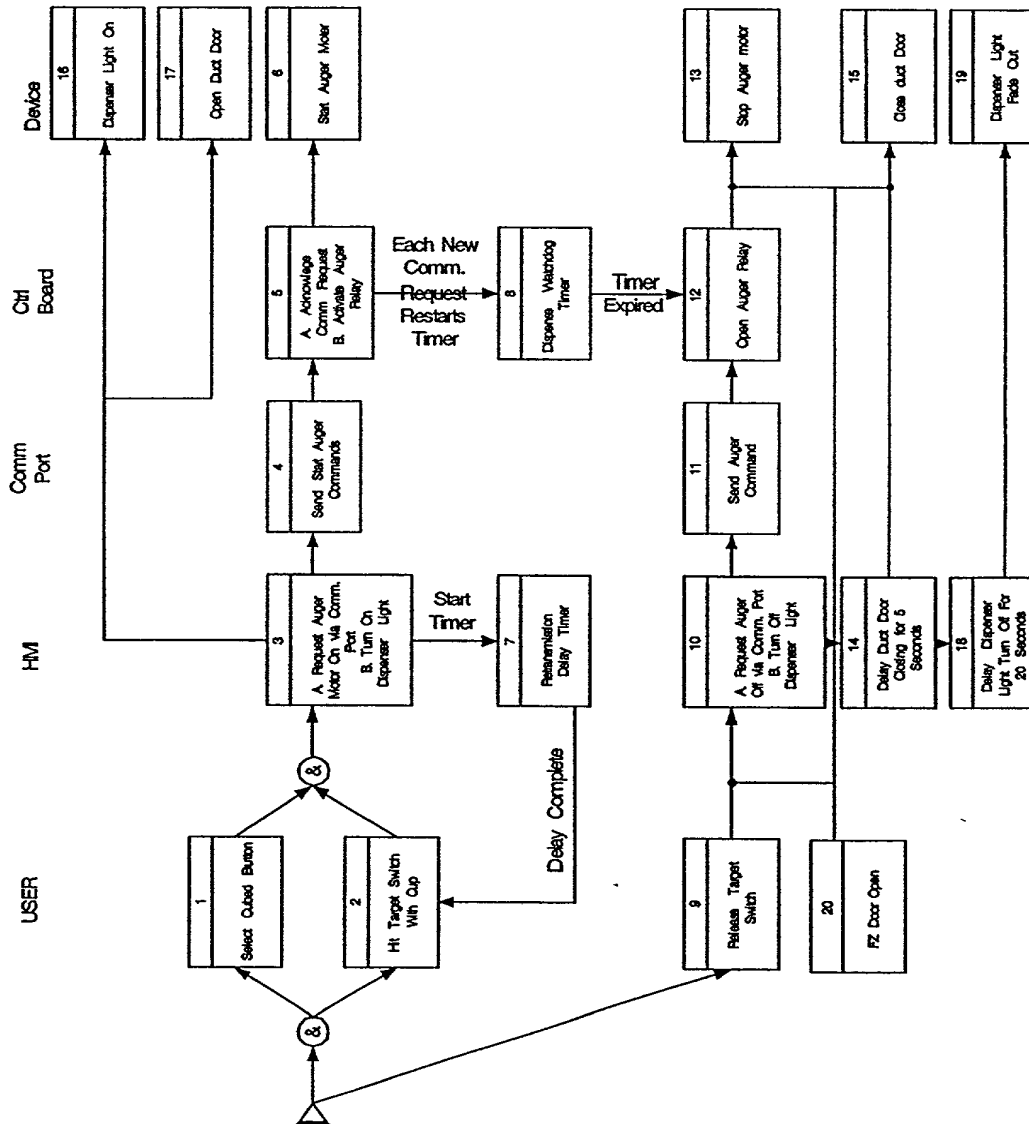
490



Crushed Ice Dispenser Interactions

Fig 23

492

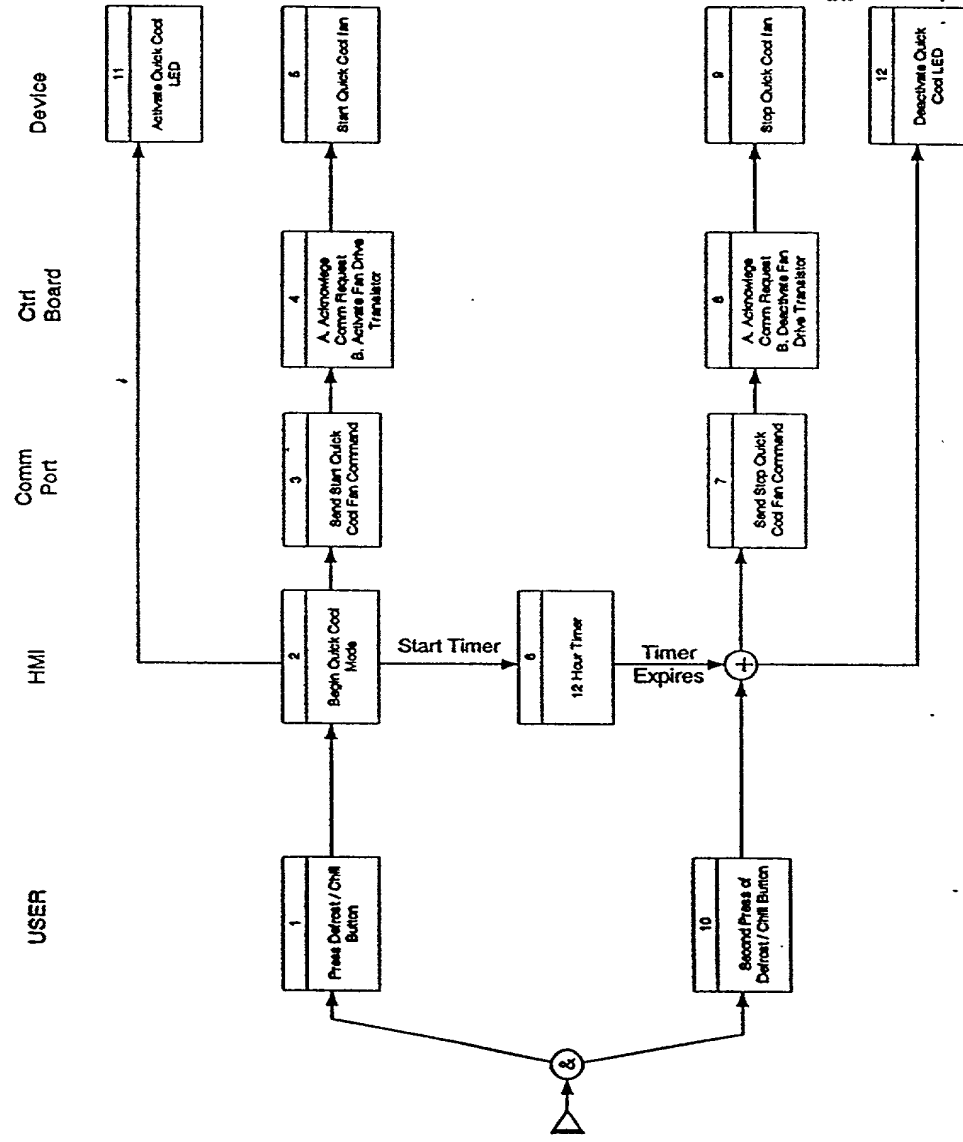


Cubed Ice Dispenser Interactions

Fig 24

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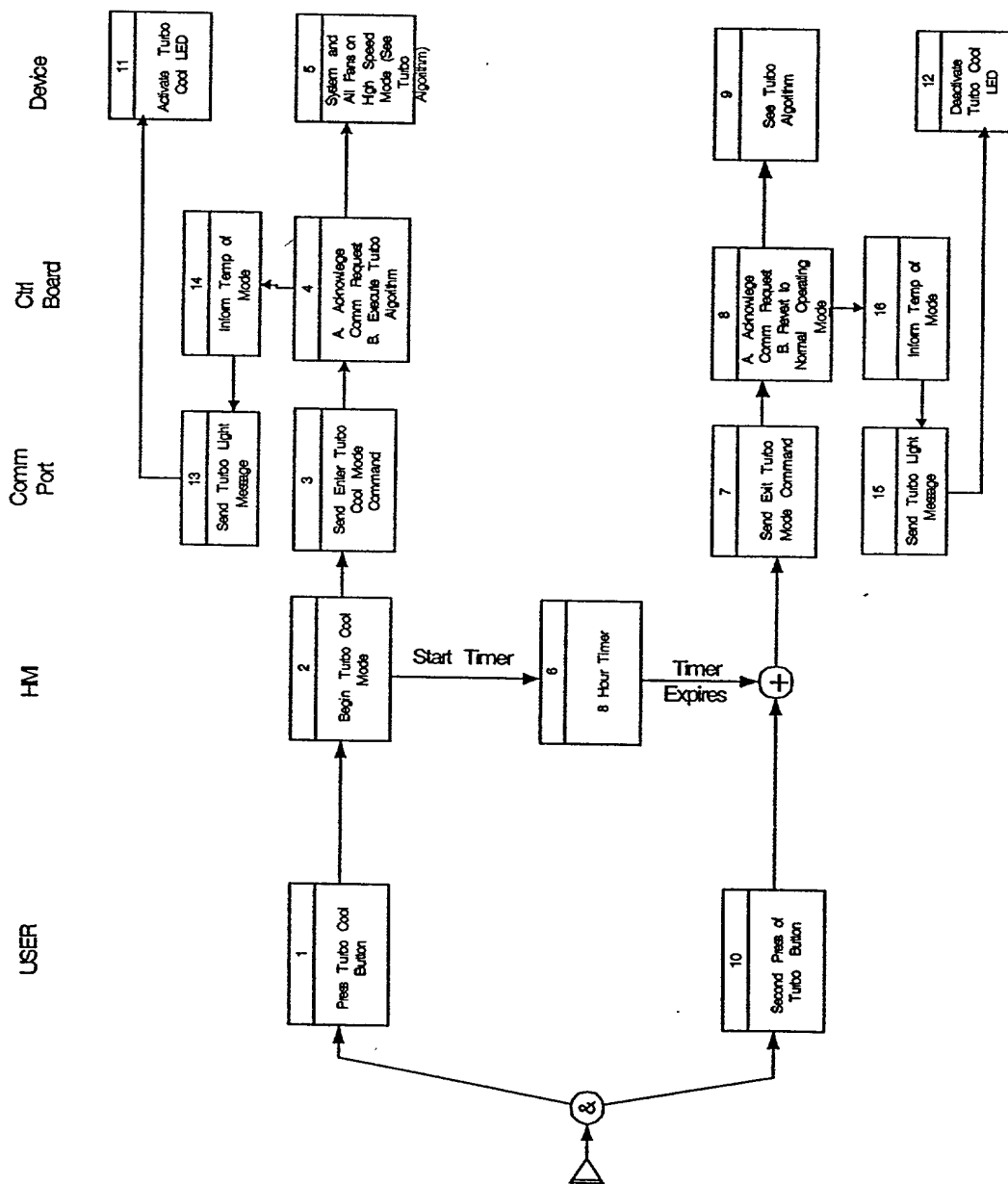
496



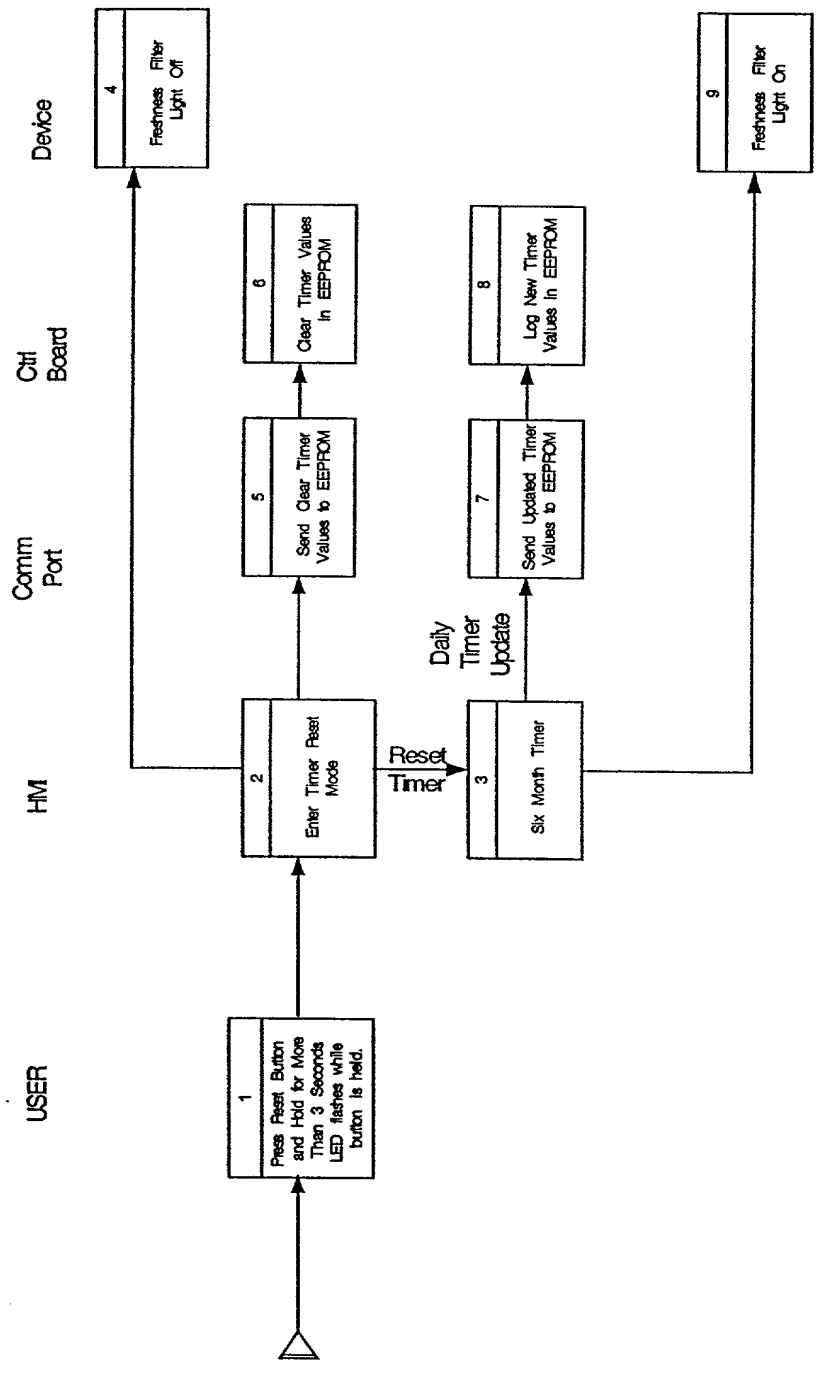
Quick Chill Interaction Diagram

Fig 26

8677



530



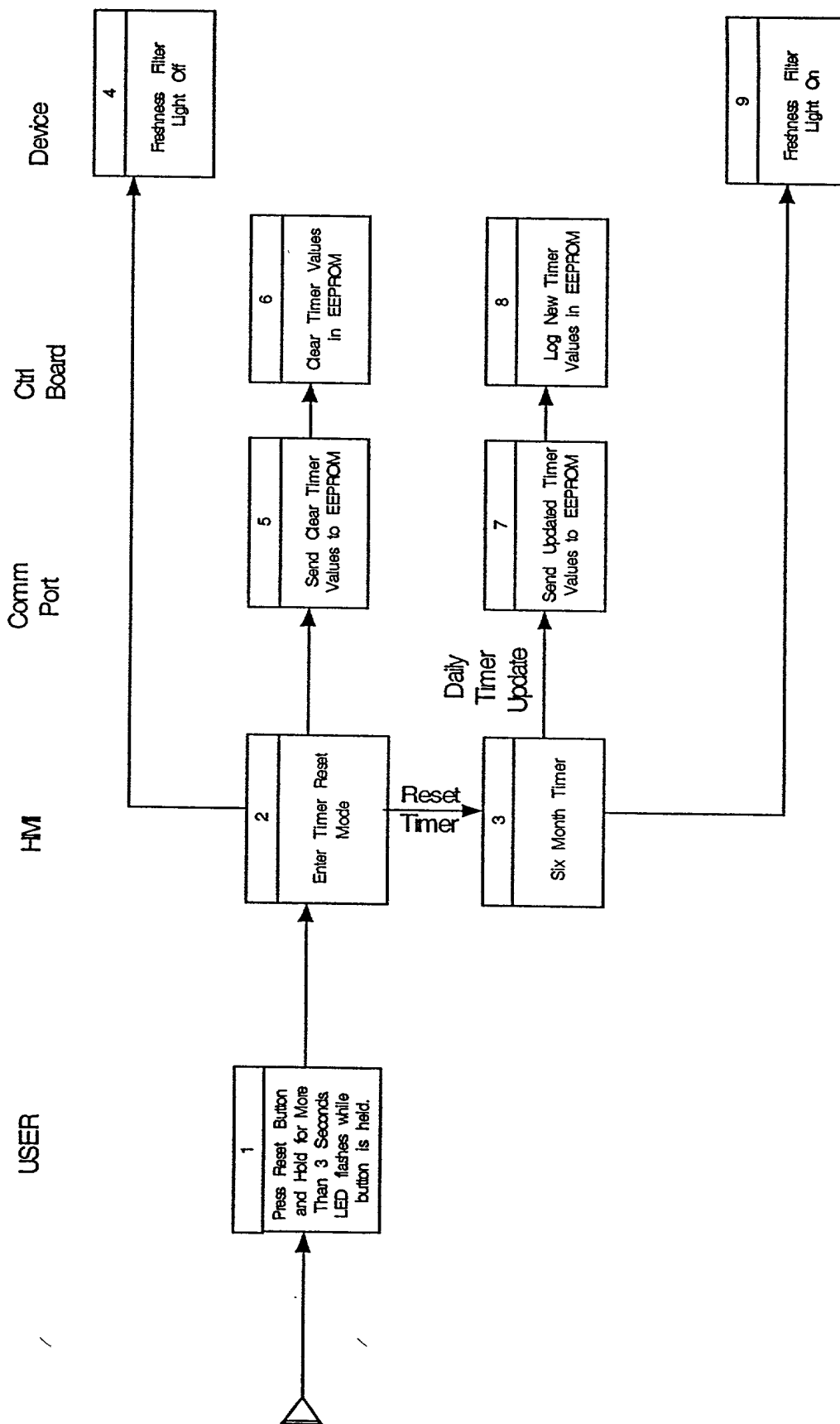
Freshness Filter Reminder Interaction

Fig 28

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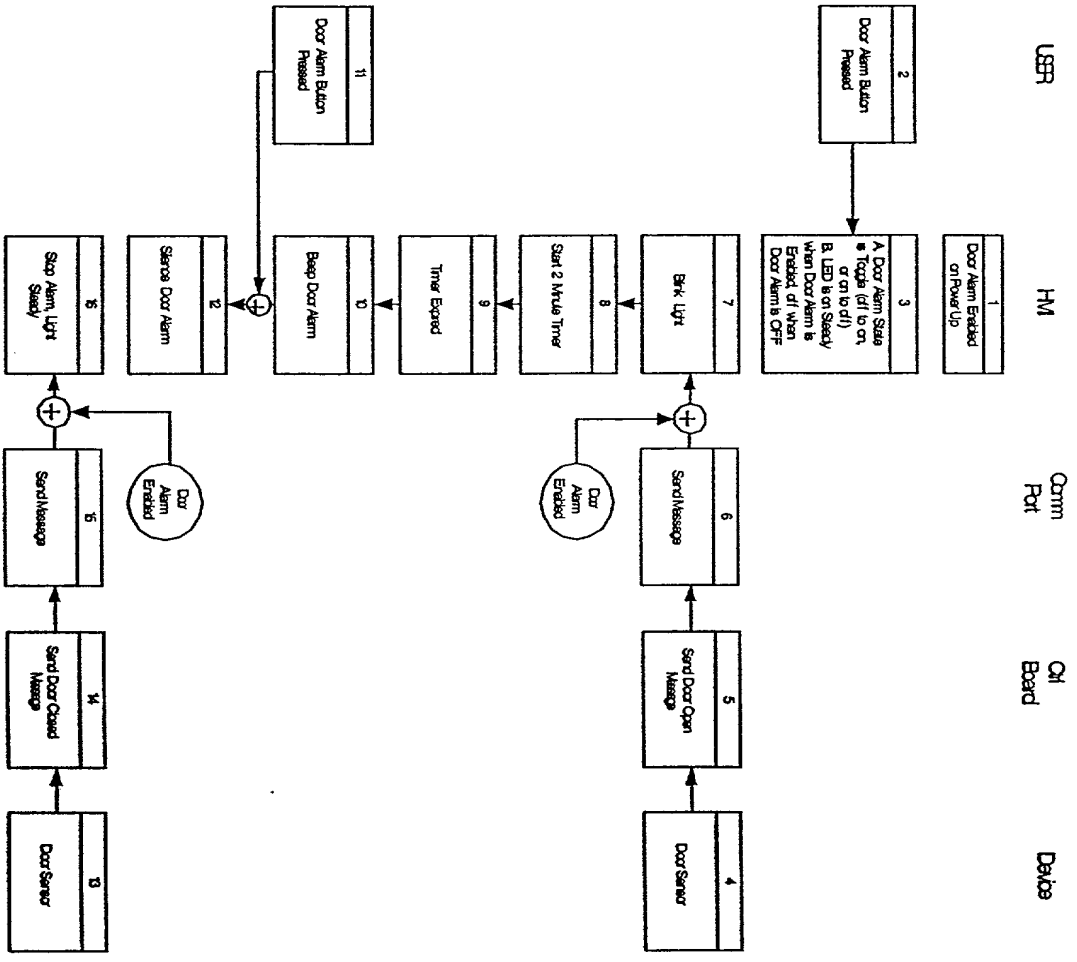
502

29



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504



Door Open Interaction Diagram

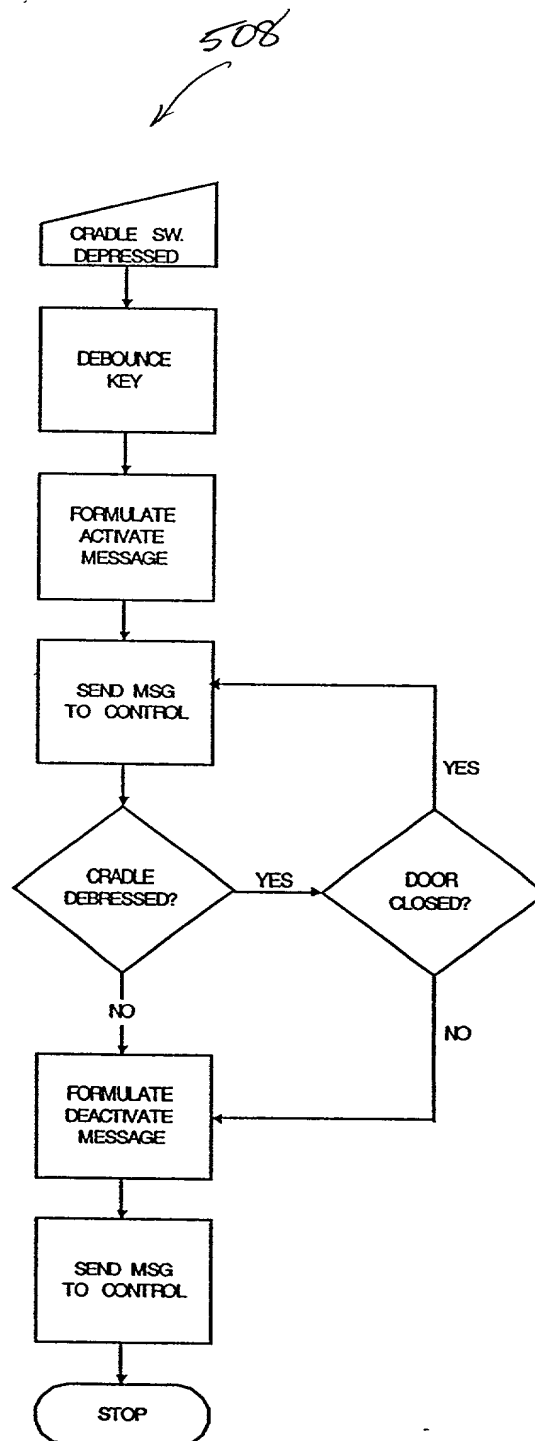
Fig 30

SS/60

505



Fis 31



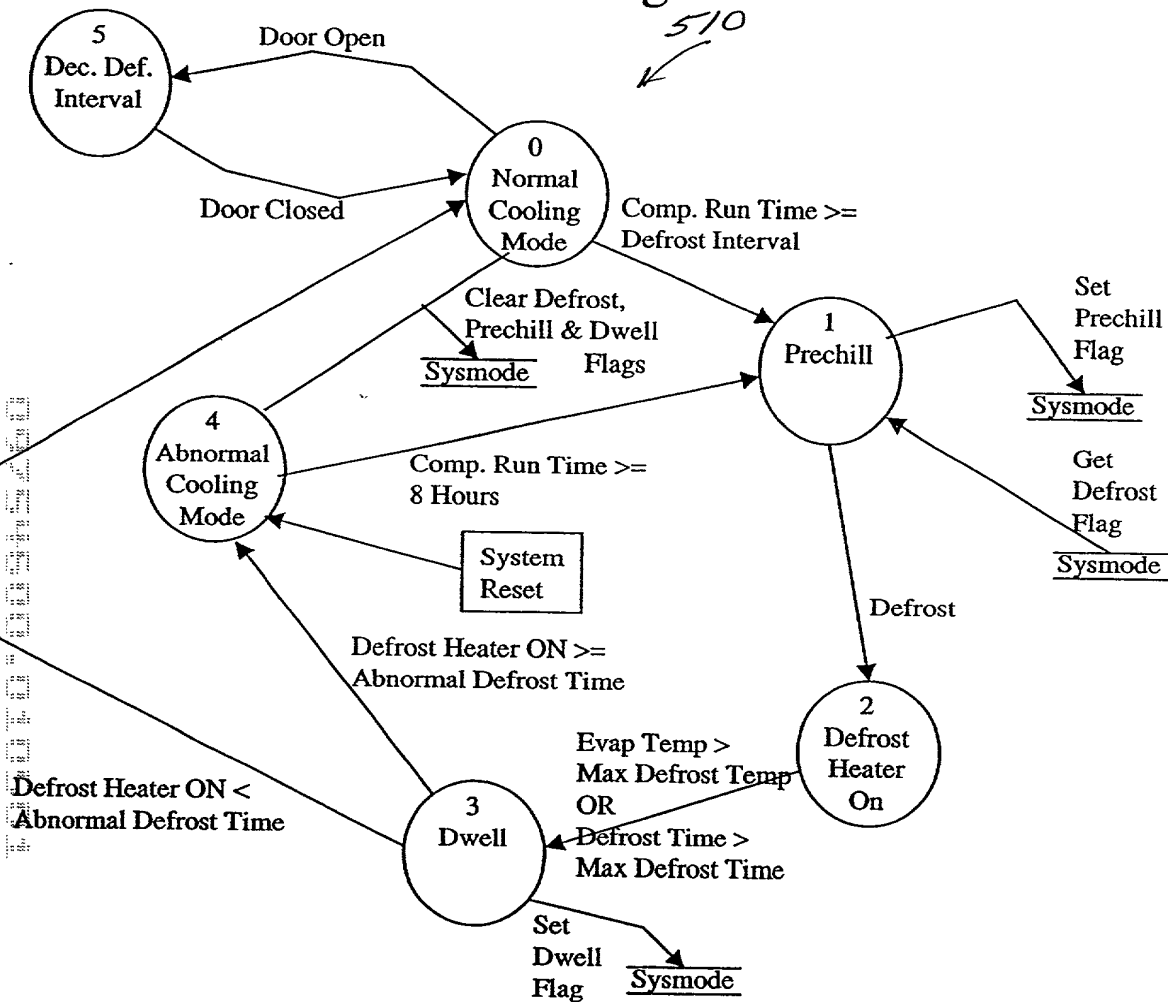
Dispenser Control Algorithm

Fig 32

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Defrost Algorithm

510



Defrost Control State Diagram

Fig 33

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5/12/2012

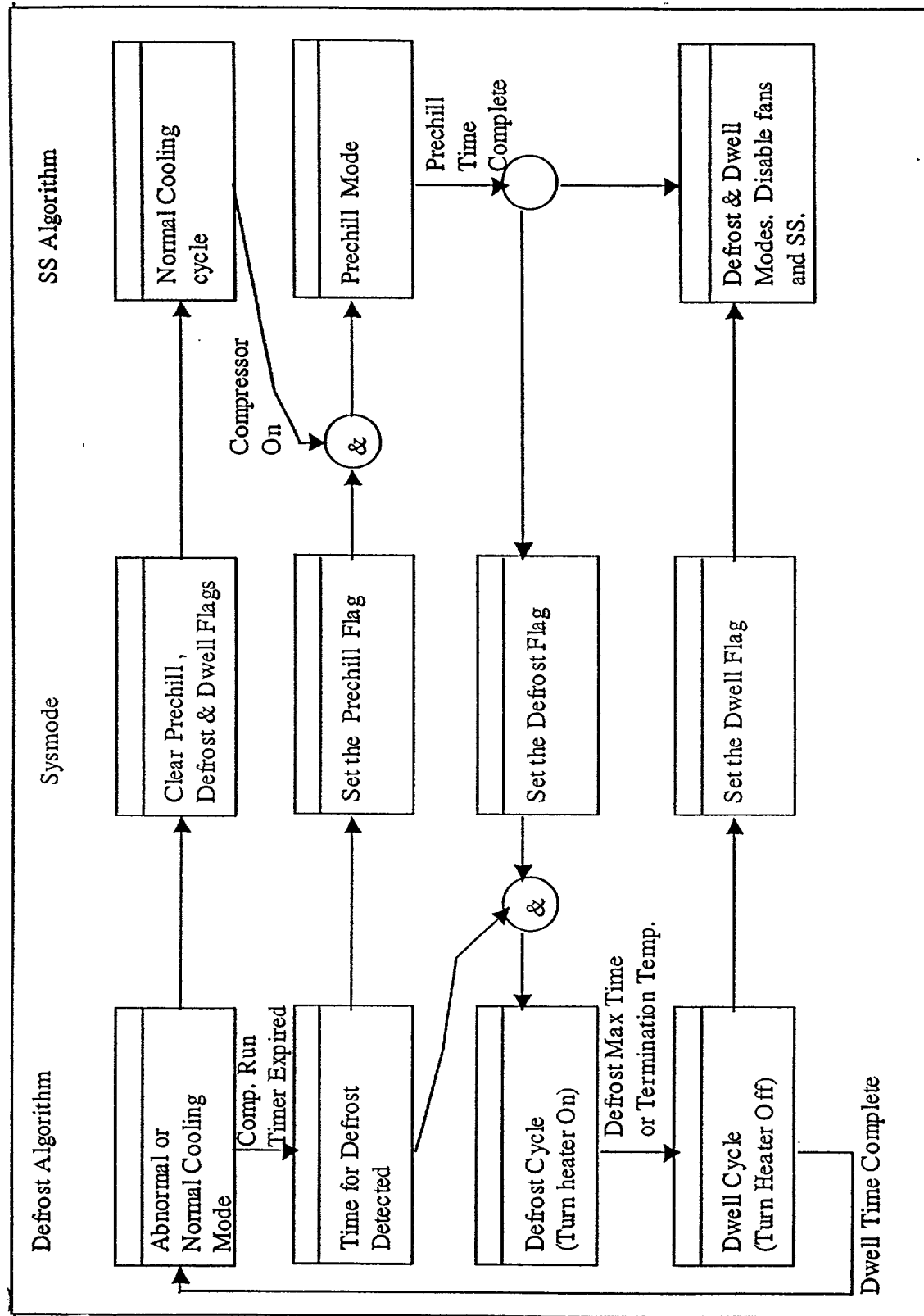
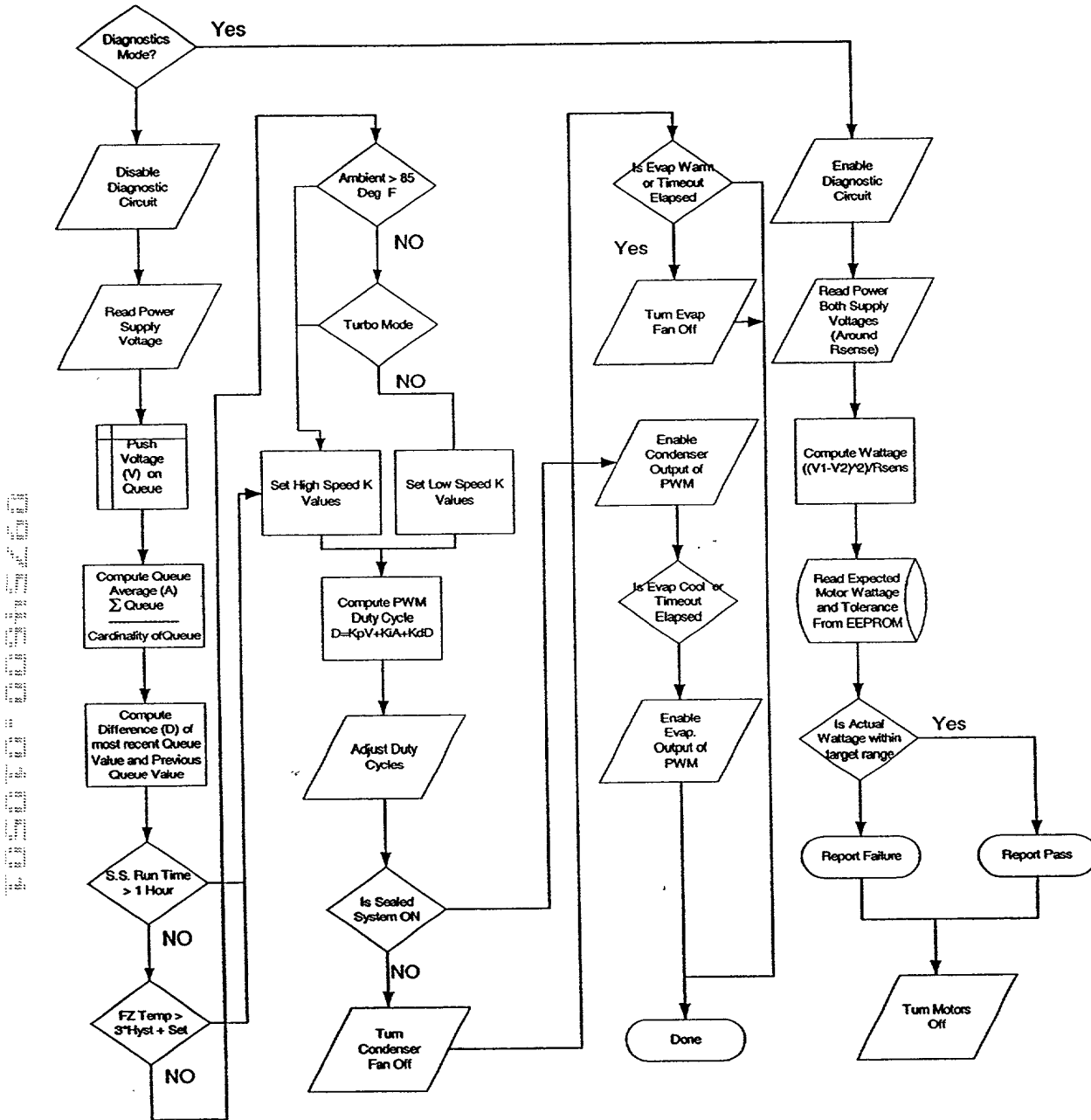


Fig 34

Evap. & Cond. Fan Control:

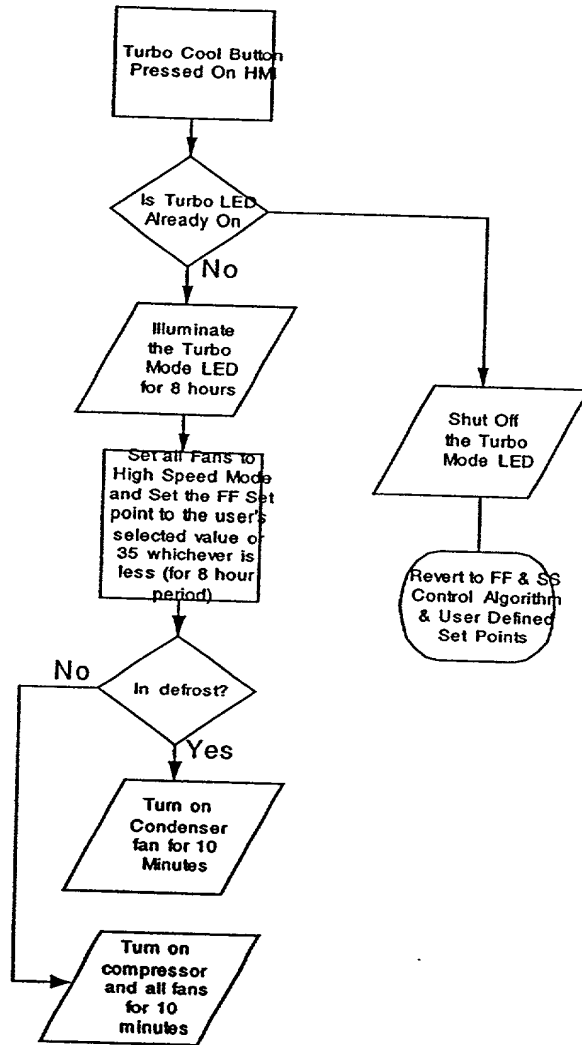


Fan Speed Control

- Notes:
1. The FF & Evaporator fans will shut off for the first five minutes that the door is open.
 2. Only one fan at a time can be on at a time during diagnostics.
 3. Once the fan has been switched to high speed, it remains in that state until the operational cycle is complete.

FIG. 35

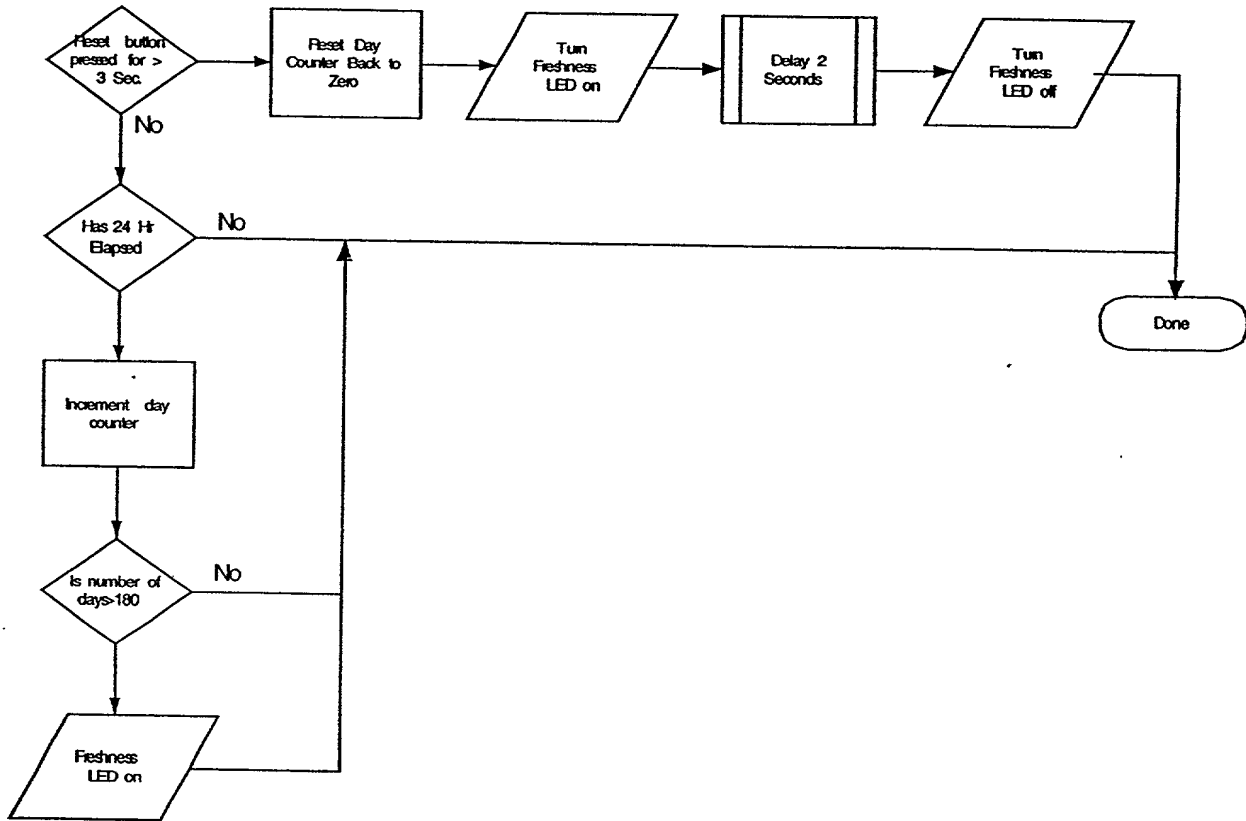
516



TURBO CYCLE ALGORITHM
Fig 36

318

Change Freshness Filter:

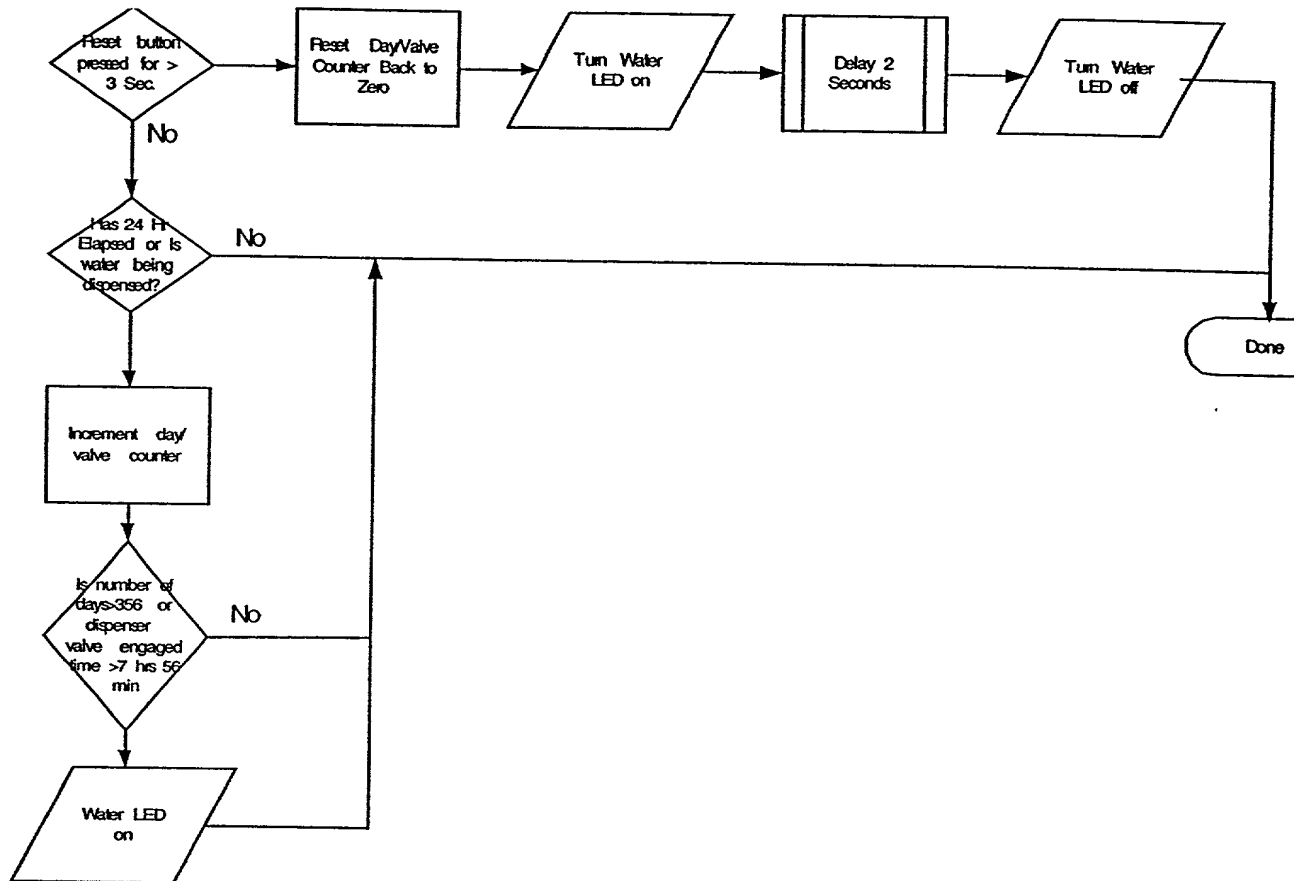


Freshness Filter Reminder Algorithm

Fig 37

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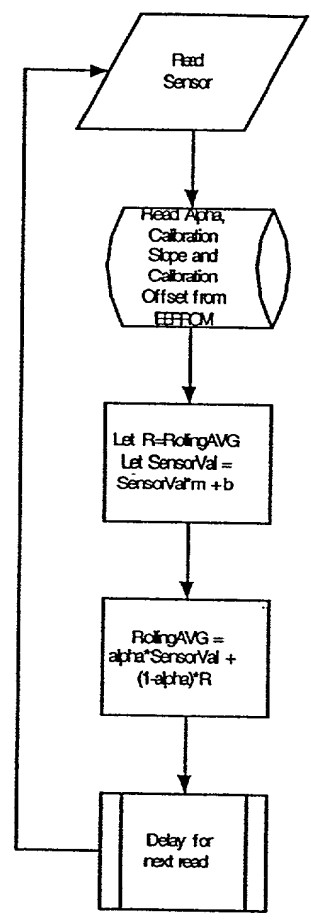


Water Filter Reminder Algorithm

Fig 38

522
↙

SENSOR READ AND ROLLING AVERAGE ALGO:



Sensor Reading Algorithm

NOTE:

Fresh food average uses this algorithm twice to create a 2nd pole filter.

Fig 39

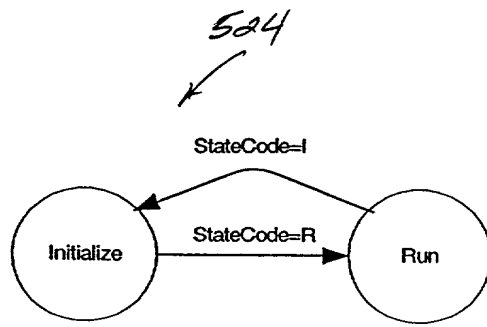


Fig. 40

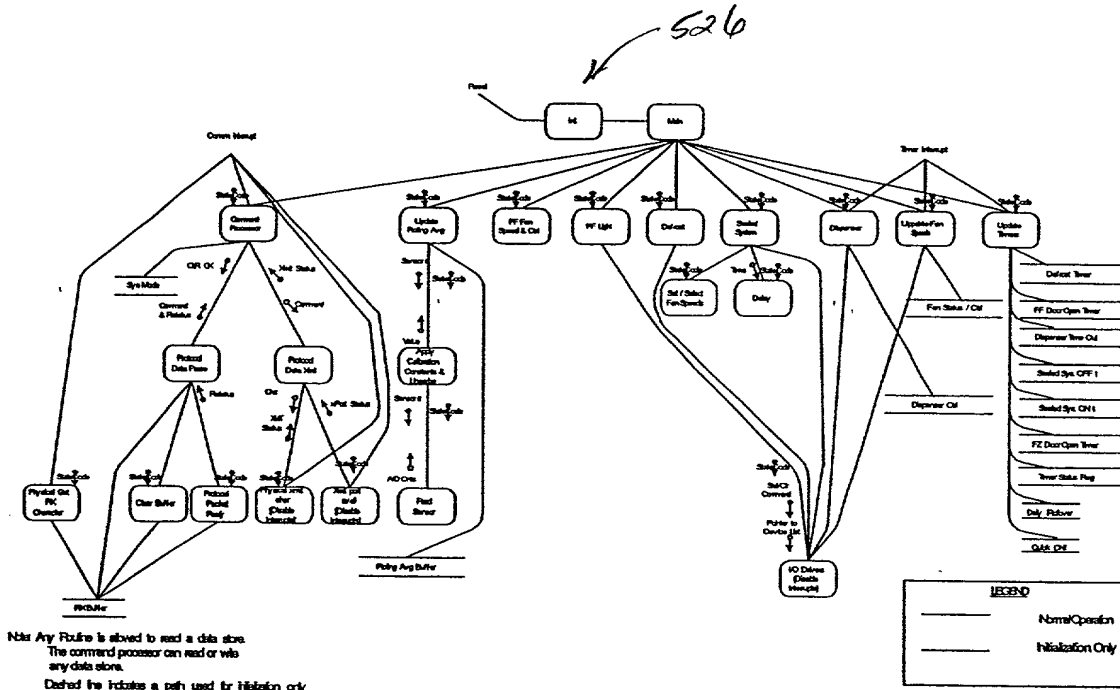
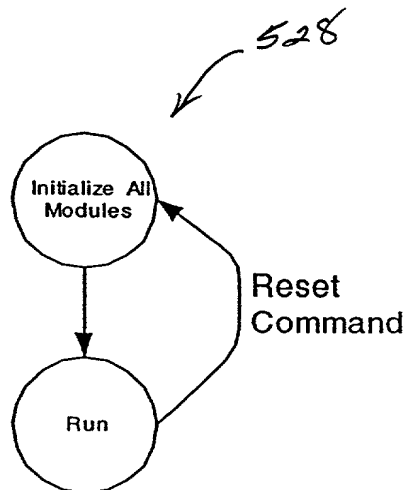


Fig. 41



STATE DIAGRAM FOR MAIN CONTROL
Fig. 42

HMI MAIN STATE MACHINE

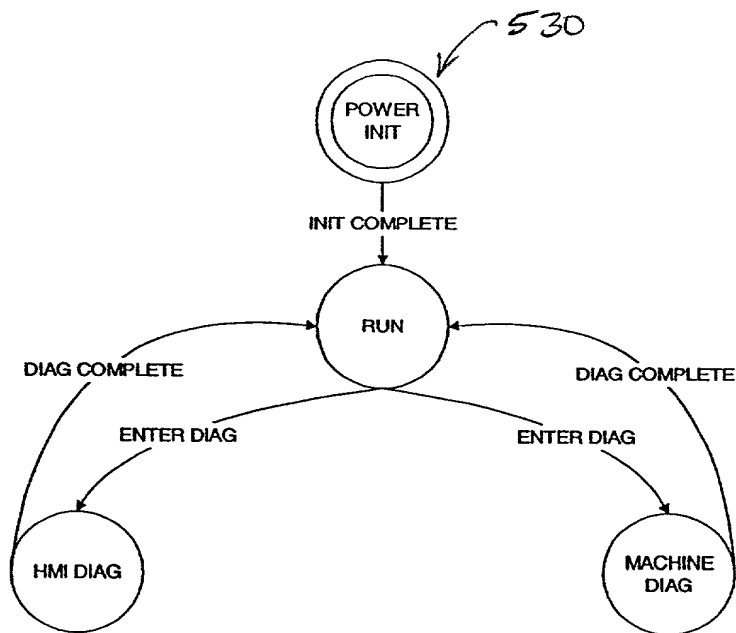
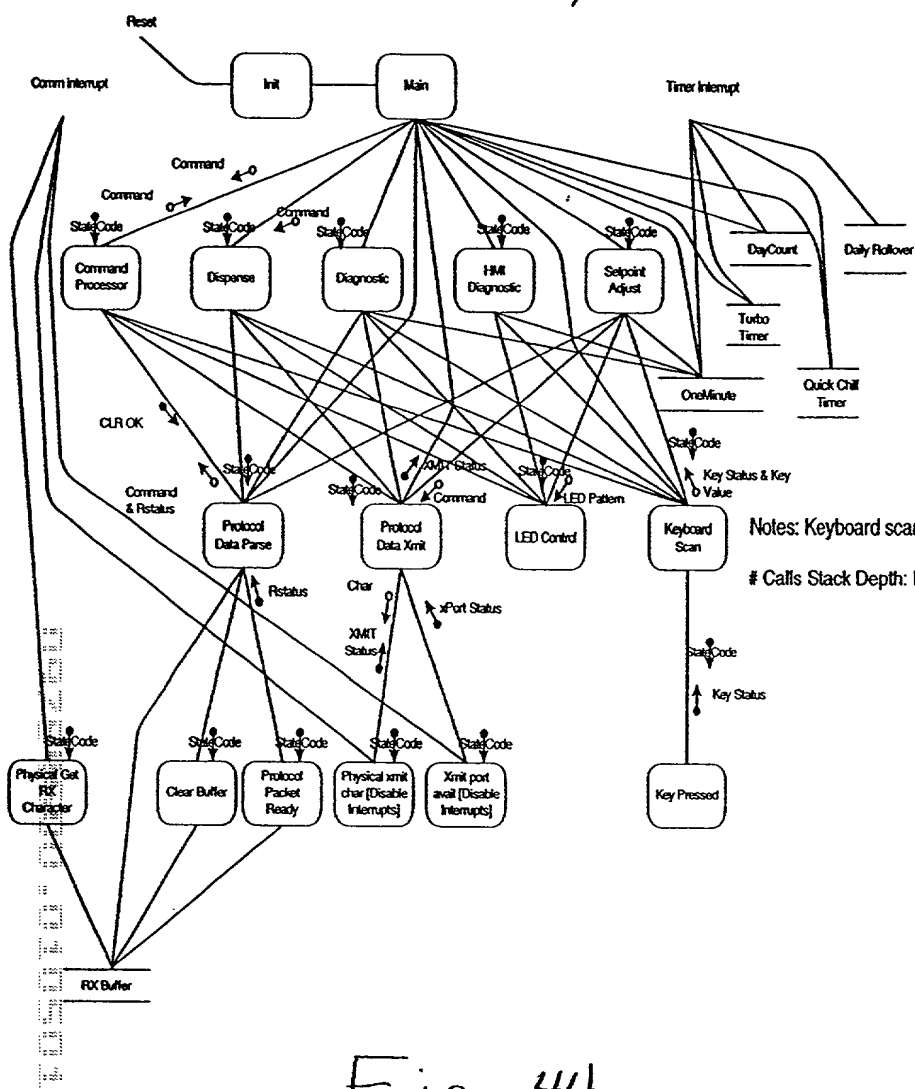


Fig. 43

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HMI Structure

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Notes: Keyboard scan should return the last key hit and whether a key is presently being pressed.
 # Calls Stack Depth: Main->Diag->Keyboardscan-> KeyPressed->Com Interrupt -> Physical get character

Fig. 44

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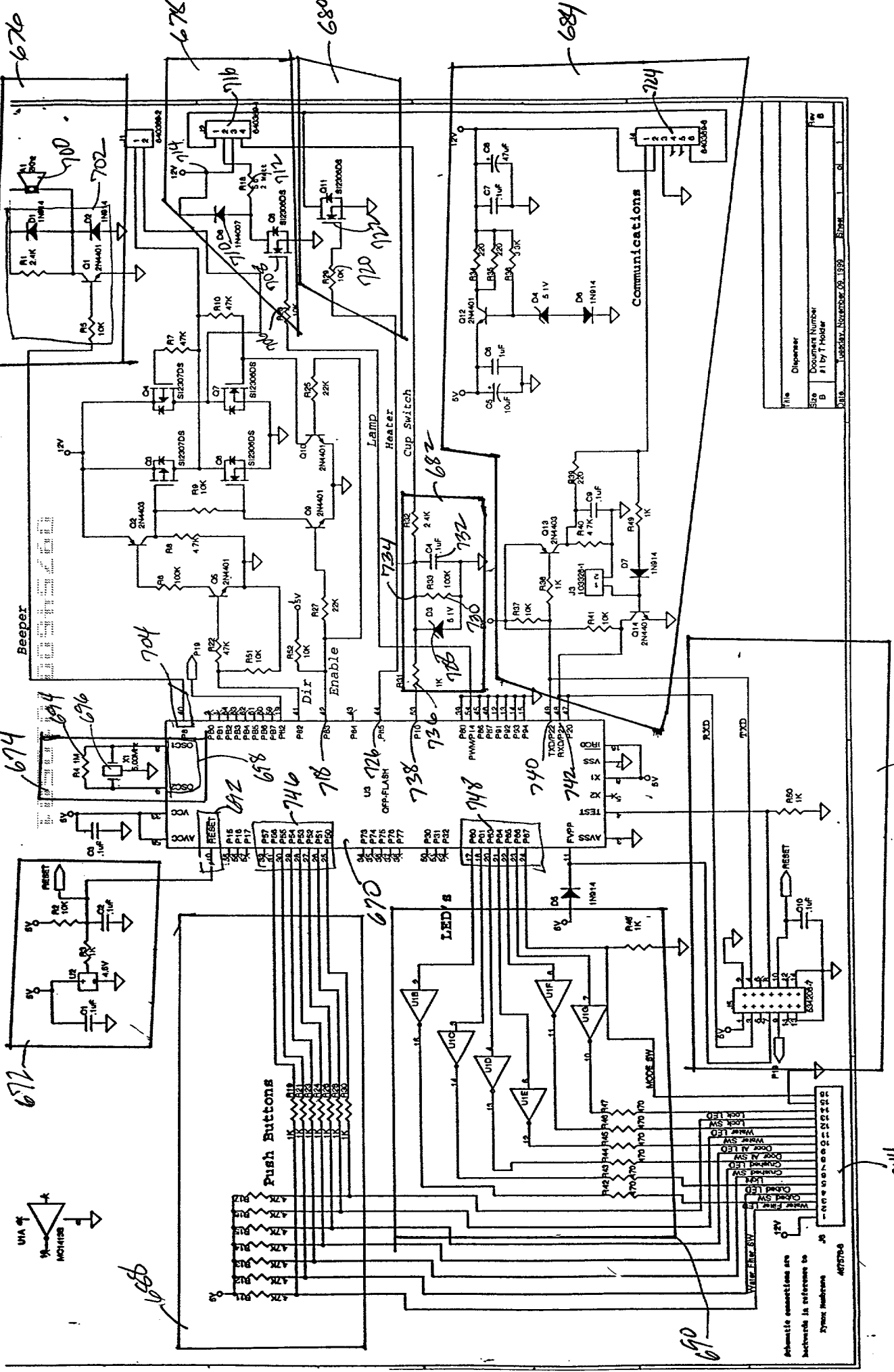
FIGURE 416

296

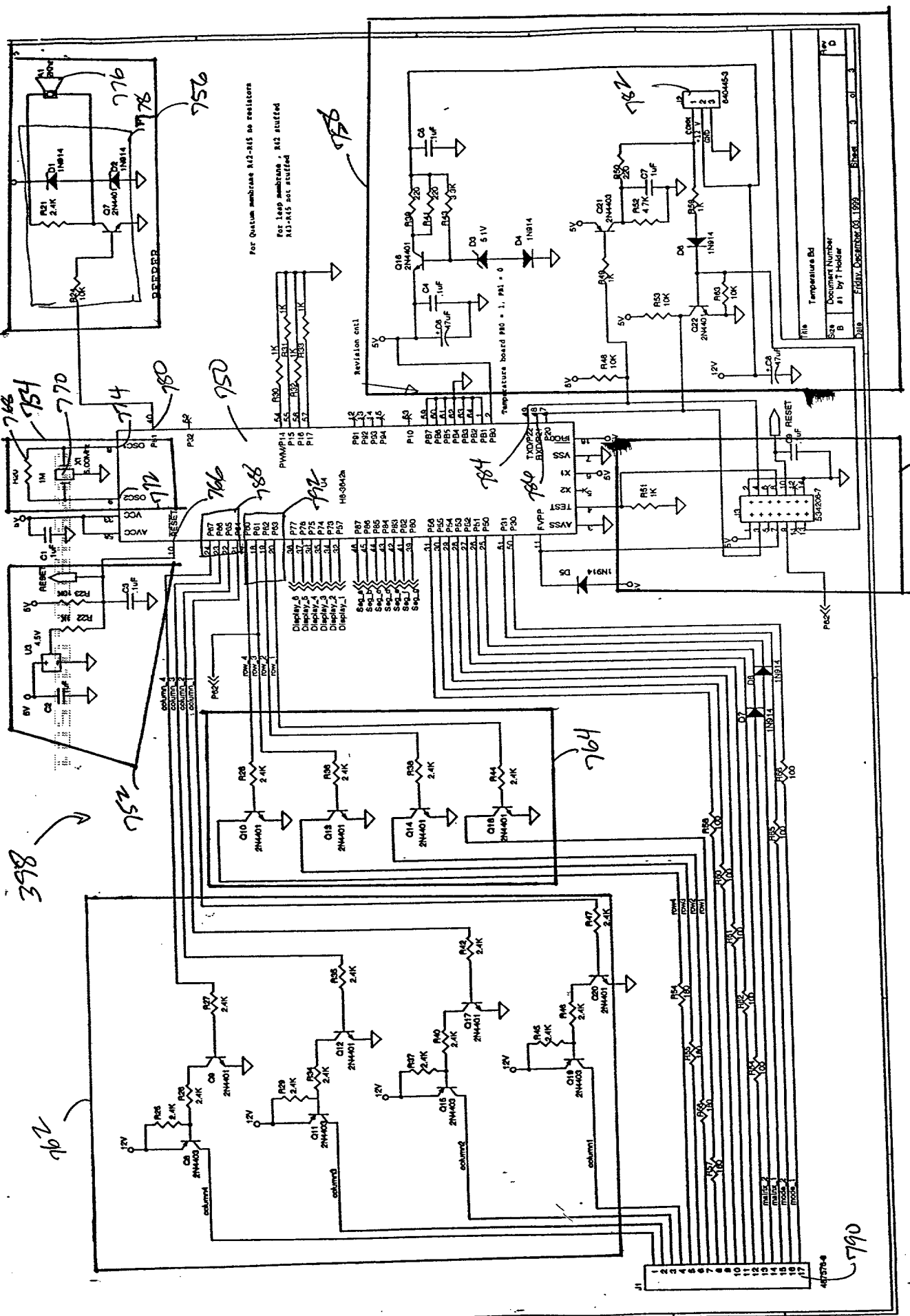
686

744

690



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Date	Lockport, November 02, 1992
Drawn	B



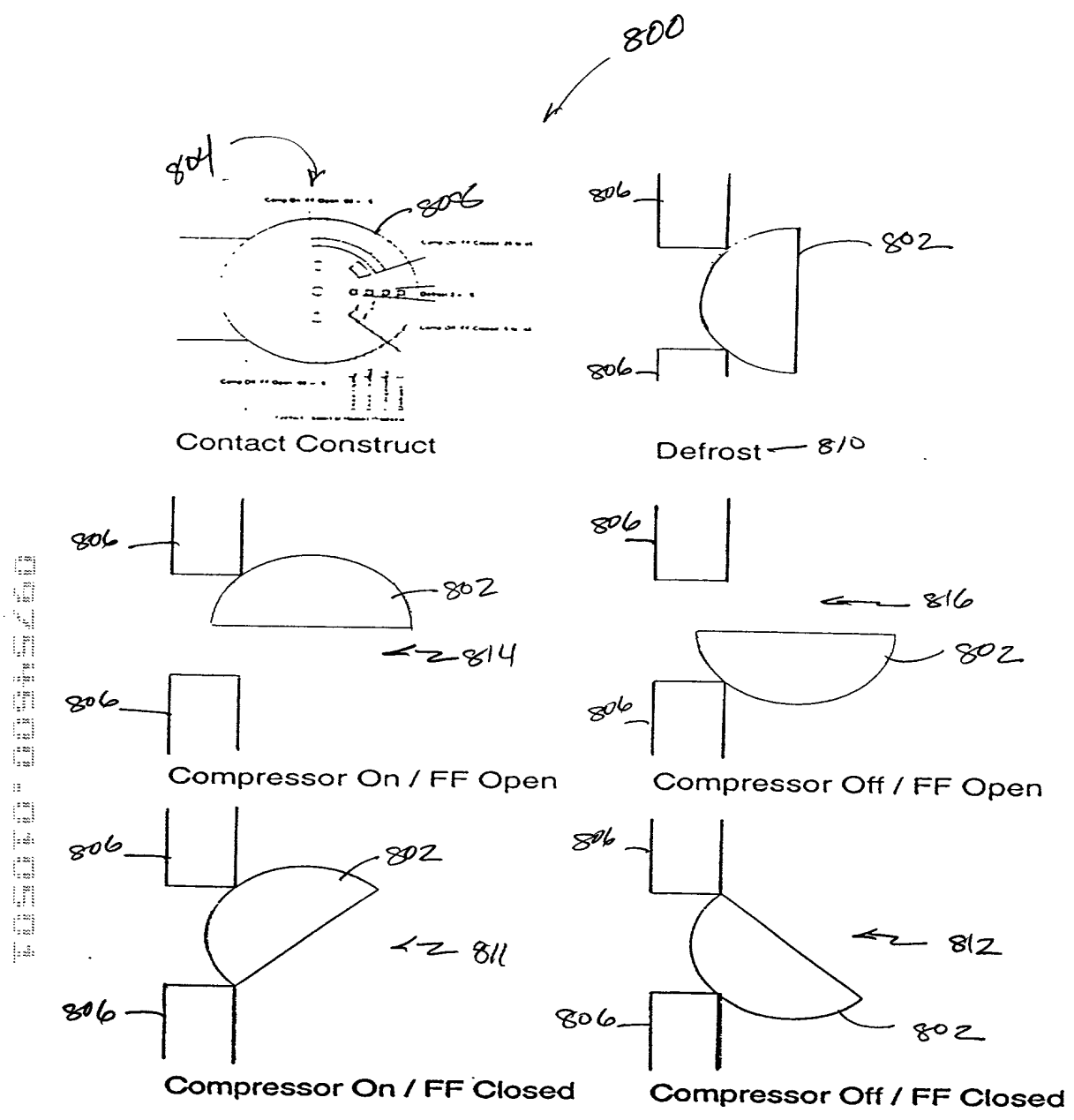
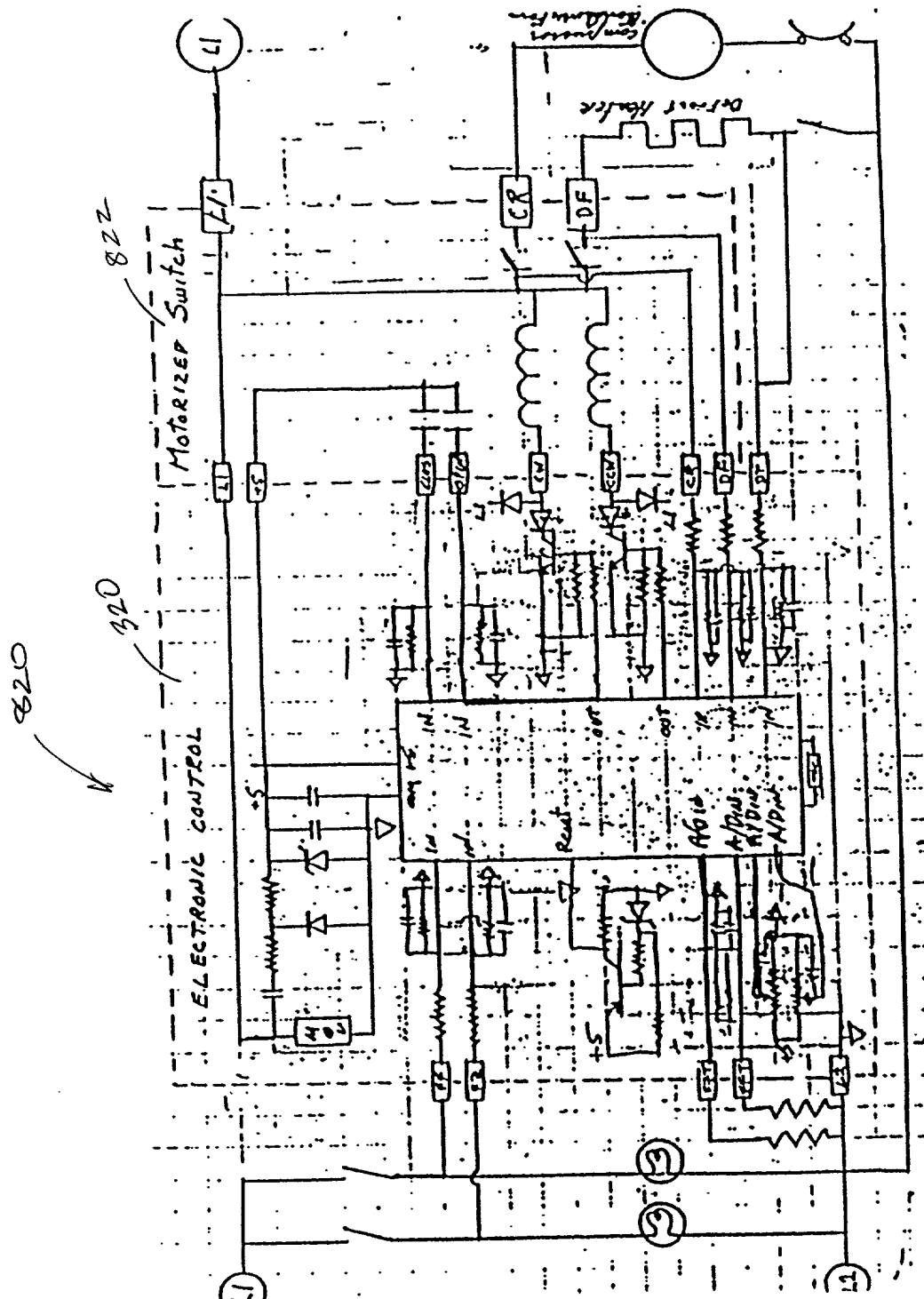


FIG. 48

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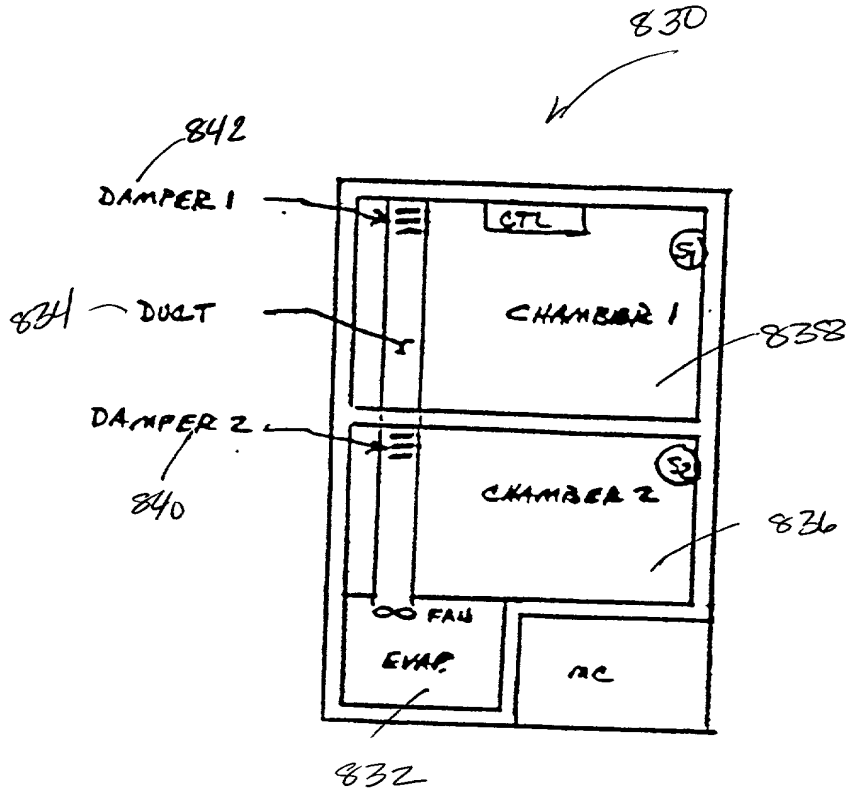


FIG. 50

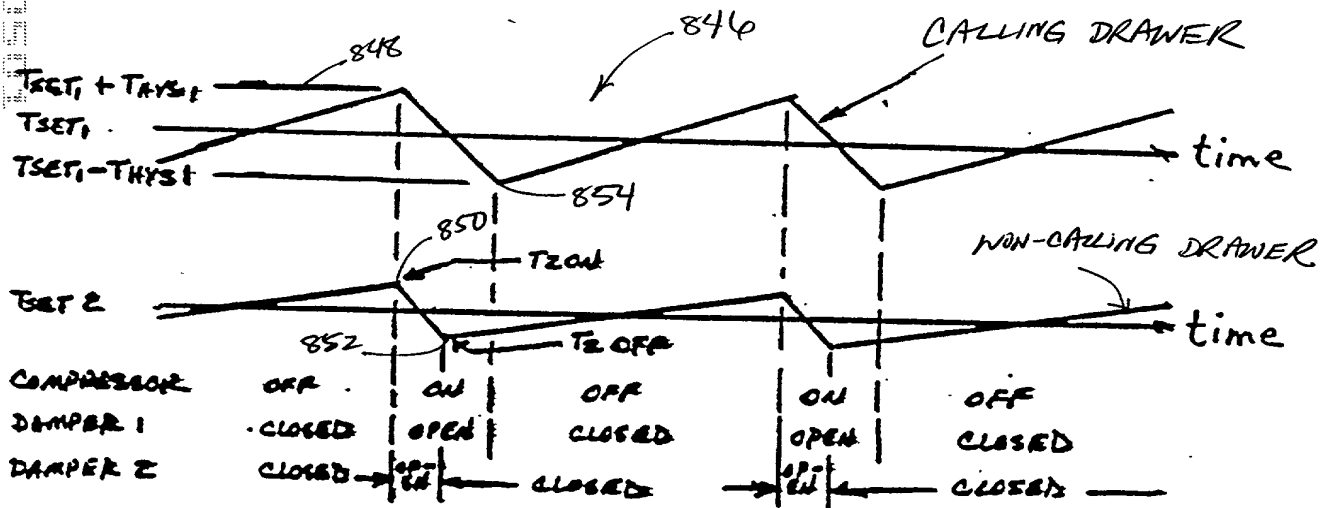
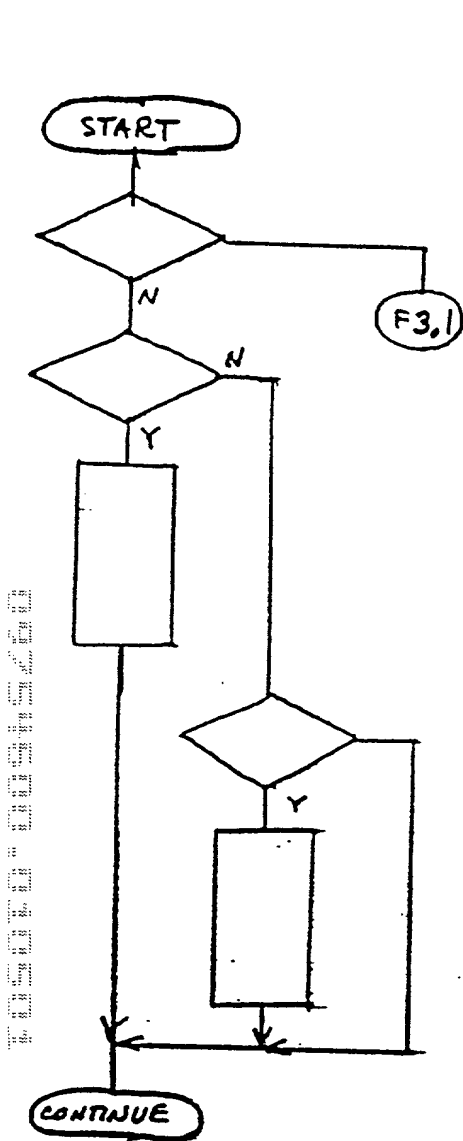


FIG. 51



COMPRESSOR ON?

$$T_i \geq T_{i \text{ MAX}}$$

```

SET DAMER FOR EQUAL AIR FLOW
TURN COMPRESSOR AND FANS ON
SET CONDITION 1 FLAG-
SET  $T_{2ON} = T_2$ 

```

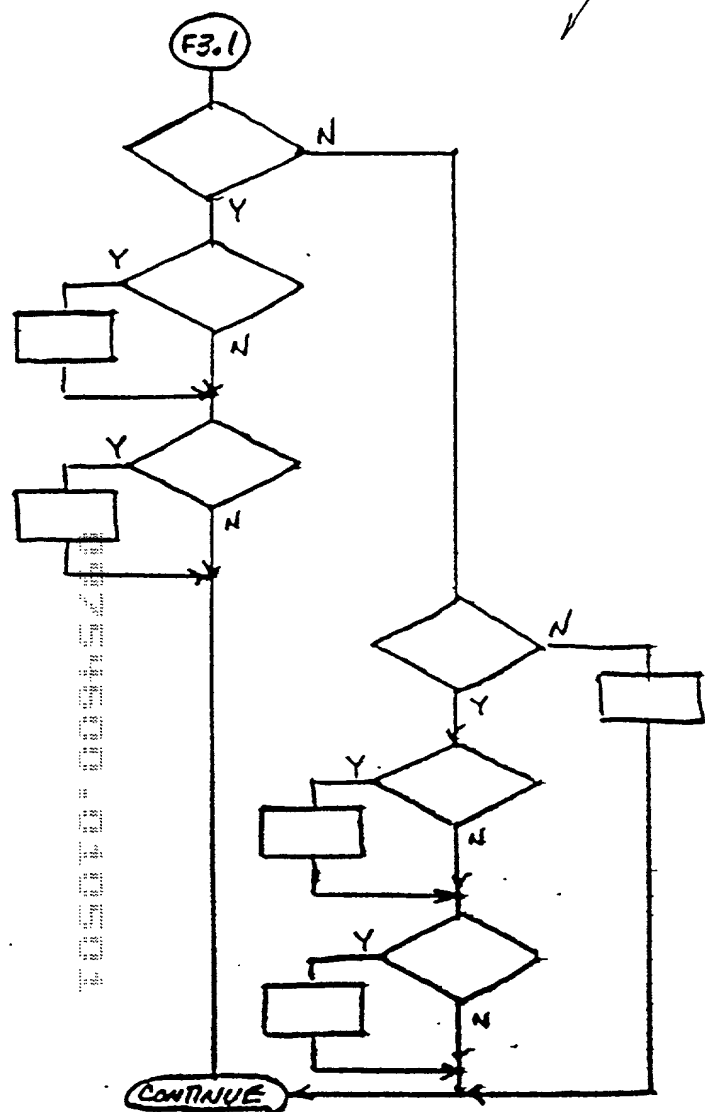
$$T_2 \geq T_{2 \max}$$

```

SET DAMPER TO MAX AIR FLOW
TURN COMPRESSOR AND FANS ON
SET CONDITION 2 FLAG.
SET  $T_{ON} = T_1$ 

```

852



CONDITION 1 FLAG SET ?

$$T_2 \leq T_{2SET} - (T_{2ON} - T_{2SET}) ?$$

CLOSE DAMPER

$$T_1 \leq T_{1\min} ?$$

TURN COMPRESSOR AND FANS OFF
RESET CONDITION 1 FLAG

CONDITION 2 FLAG SET ?

ERROR - RESTART COMPUTER

$$T_2 \leq T_2 \text{ MIN} \quad ?$$

CLOSE DAMPER

$$T_1 \leq T_{\text{SET}} - (T_{\text{ON}} - T_{\text{SET}}) ?$$

TURN COMPRESSOR AND FANS OFF
RESET CONDITION 2 FLAG

FIG. 54

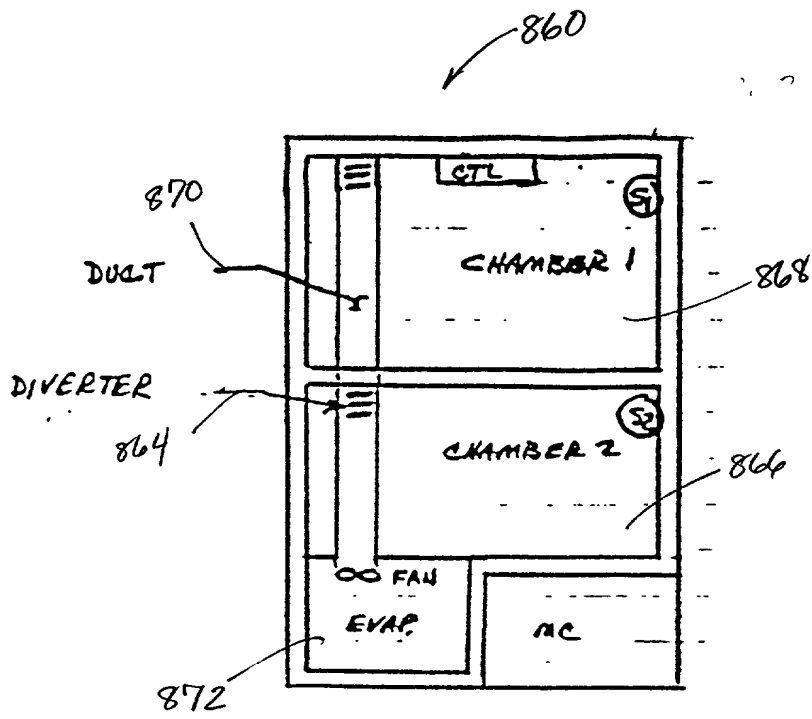


FIG. 55

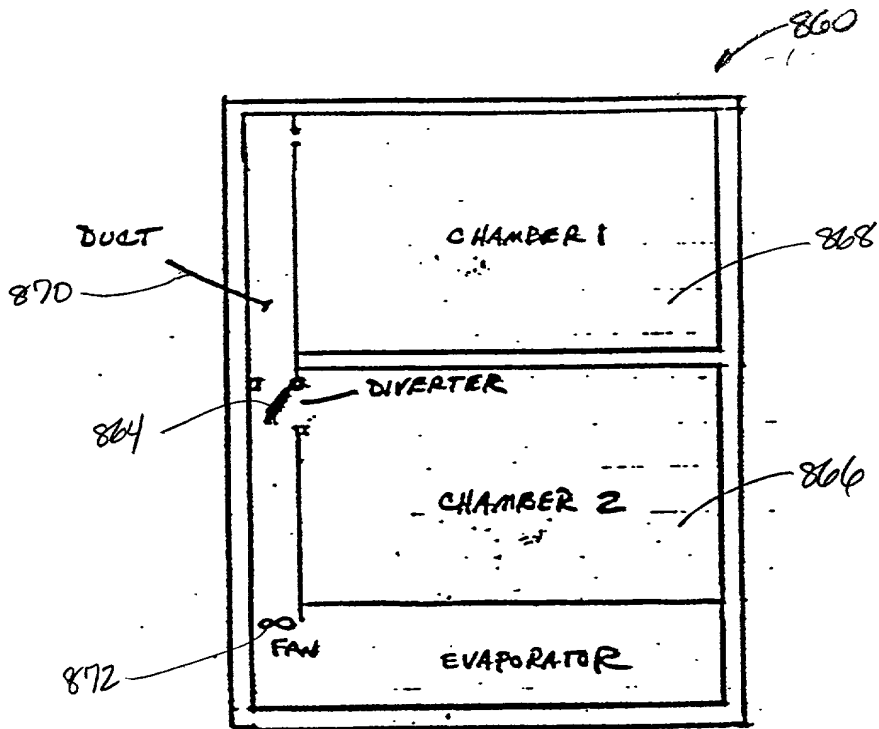


FIG. 56

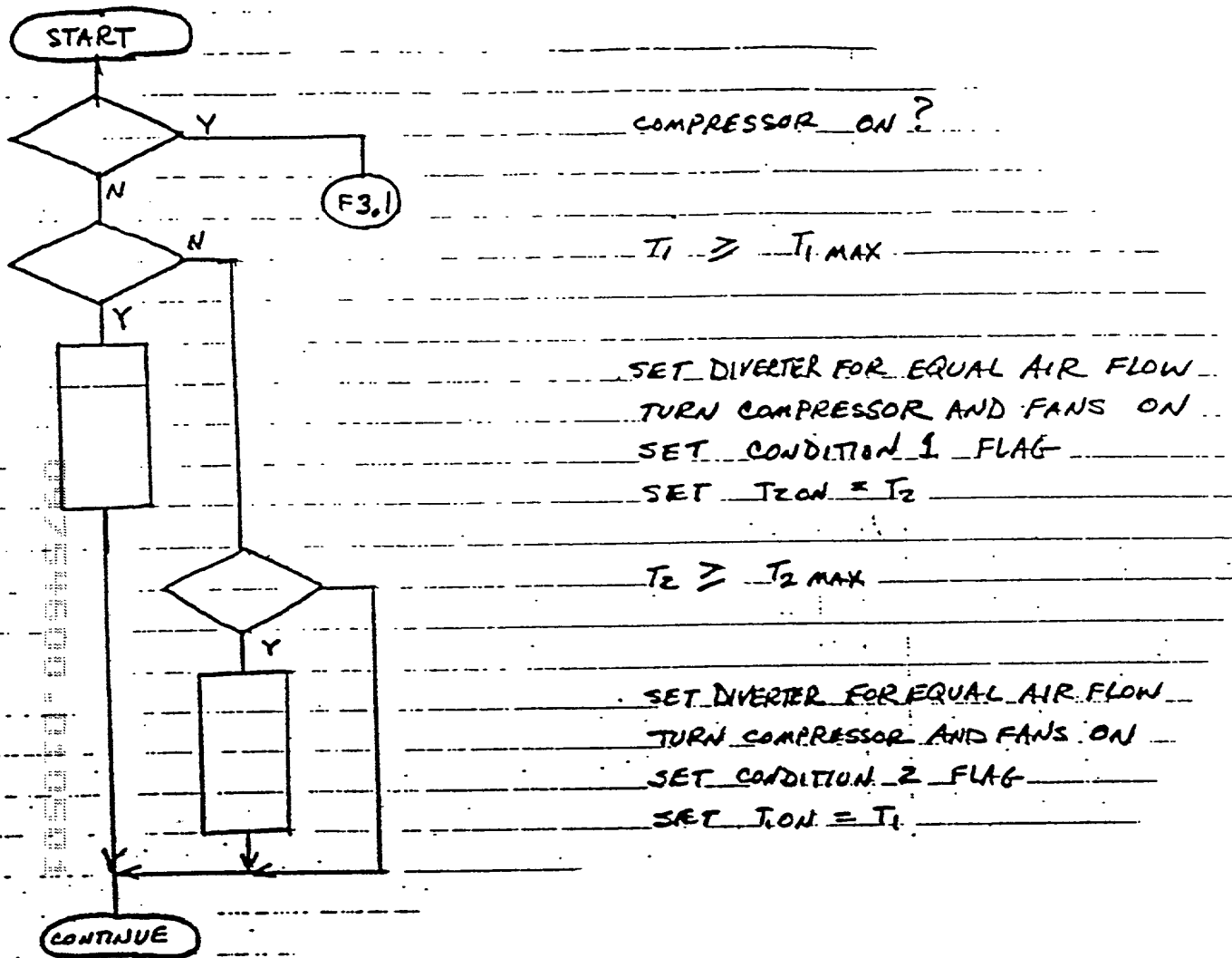


FIG. 57



FIG. 58

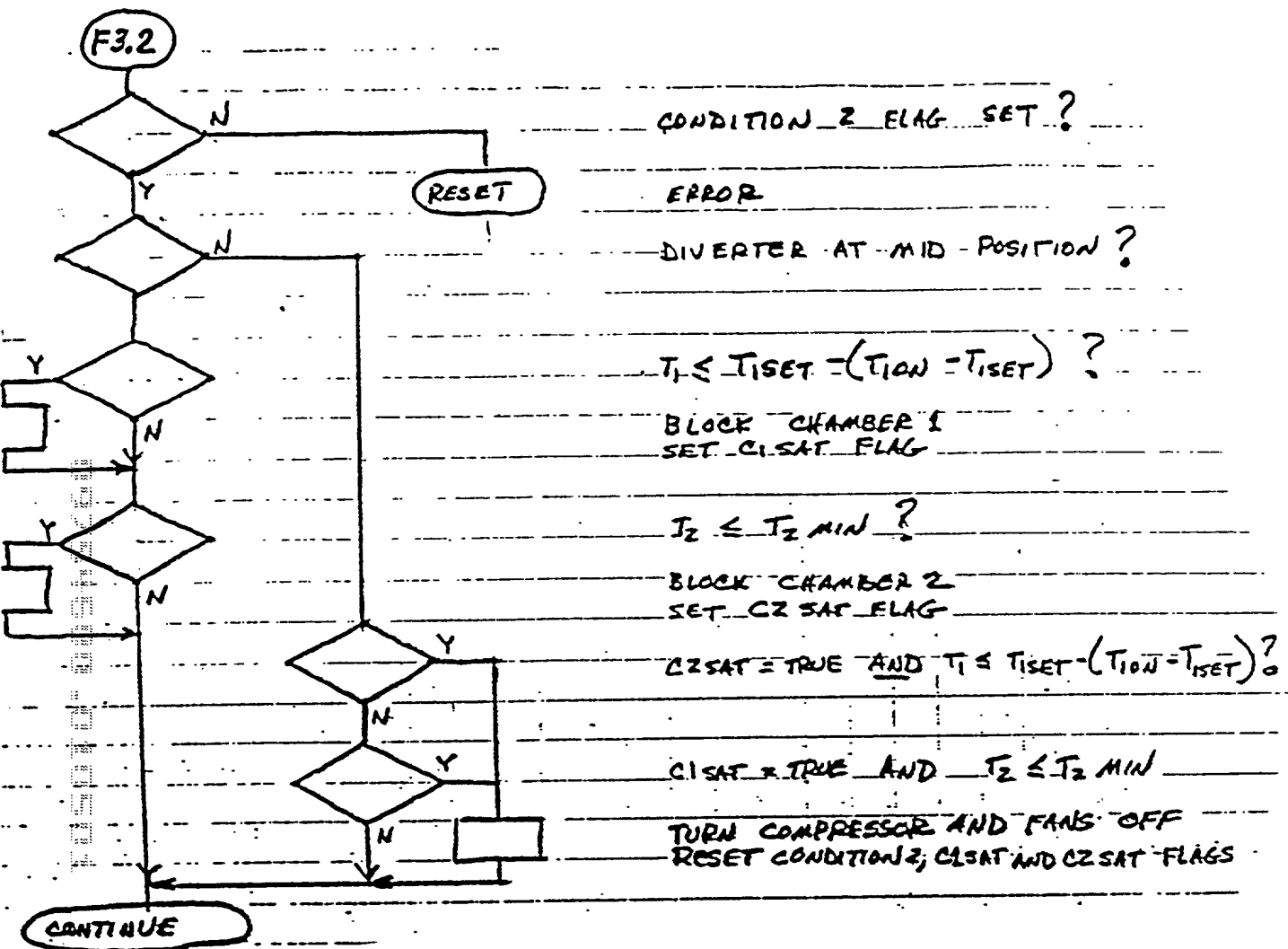


FIG. 59